

Public Notice

DEQ Requests Comments on Covanta Marion, Inc. Air Quality Permit

The Department of Environmental Quality invites the public to submit written comments on the conditions of Covanta Marion, Inc. proposed renewal air quality permit, known officially as a Oregon Title V Operating Permit.

Summary

The proposed permit is a renewal of the existing Title V permit which expired on 4/1/17. Upon issuance, this permit will be effective for five years.

How do I participate?

To submit your comments for the public record, send them by mail, fax or email:

Suzy Luttrell, Permit Coordinator
4026 Fairview Industrial Dr. SE
Salem, OR 97302
Fax: 503-378-4196
Email: luttrell.suzy@deq.state.or.us

Written comments are due by 5 p.m. Thurs. Oct. 31, 2019.

About the facility

The facility receives and combusts municipal solid waste, medical waste, and industrial waste (primarily from Marion County) to produce steam which in turn is used to generate electricity.

What air pollutants would the permit regulate?

This permit regulates emissions of the pollutants listed in the table at the end of this document which includes Particulate Matter (PM), Small and Fine Particulate Matter (PM_{10/2.5}), Carbon Monoxide (CO), Nitrogen Oxides (NO_x), Sulfur Dioxides (SO₂), Volatile Organic Compounds (VOCs), Acid Gases, Metals, Dioxins/Furans, Hazardous Air Pollutants (HAPs), and Greenhouse Gases (GHGs).

How does DEQ determine permit requirements?

DEQ evaluates types and amounts of pollutants and the facility's location, and determines permit requirements according to state and federal regulations.

How does DEQ monitor compliance with the permit requirements?

This permit would require the facility to monitor pollutants using federally-approved monitoring practices and standards.

What happens after the public comment period ends?

DEQ will schedule a public hearing if one is requested by 10 or more people, or by an authorized person representing an organization of at least 10 people. An additional public notice will be published to advertise the public hearing.

If a public hearing is not requested, DEQ will consider and provide responses to all comments received at the close of the comment period. DEQ may modify provisions in the proposed permit, but the permit writers can only modify conditions of the permit in accordance with the rules and statutes under the authority of DEQ. Participation in the rulemaking or the legislative process is the only way to change the rules or statutes. Ultimately, if a facility meets all legal requirements, DEQ will issue the facility's air quality permit.

Where can I get more information?

Find out more and view the application at <https://www.oregon.gov/deq/Get-Involved/Pages/Public-Notices.aspx> or contact

Gary Andes at:
Phone: 503-378-4996 or 1-800-349-7677
Fax: 503-378-4196
Email: andes.gary@deq.state.or.us

View the application and related documents in person at the DEQ office in Salem or at the Salem Public Library, 585 Liberty St. SE Salem, Oregon. For a review appointment, call Suzy Luttrell at 503-378-5305.

Alternative Formats

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.



State of Oregon
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Environmental
Quality

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Contact: Gary Andes

www.oregon.gov/DEQ

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restoring, maintaining and
enhancing the quality of
Oregon's air, land and
water.*

Emissions limits

Regulated Pollutants: Table 1 below presents maximum **allowable** emissions of regulated pollutants for the facility. The current emission limit reflects maximum emissions the facility can emit under the existing permit. The proposed emission limit reflects maximum emissions the facility would be able to emit under the proposed permit. Typically, a facility's actual emissions are less than maximum limits established in a permit; however, actual emissions can increase up to the permitted limit.

Table 1

Pollutant	Current Limit (tons/year)	Proposed Limit (tons/year)
Particulate matter (PM)	24	24
Small particulate matter (PM ₁₀)	14	16
Fine particulate matter (PM _{2.5})	12	16
Nitrogen oxides (NO _x)	337	337
Sulfur dioxide(SO ₂)	39	39
Carbon monoxide (CO)	99	99
Volatile Organic Compounds (VOC)	---	39
MWC Acid Gases (SO ₂ +HCl)	55	42
MWC Organics (Dioxins/Furans)	3.0x10 ⁻⁶	3.0x10 ⁻⁶
Greenhouse gases (GHG)	107,100	214,400

For more information about criteria pollutants, go to: <https://www.epa.gov/criteria-air-pollutants>

Hazardous air pollutants:

Covanta Marion is a major source of hazardous air pollutants. The emergency fire pump is subject to the National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines in 40 CFR Part 63 Subpart ZZZZ. Table 2 lists the hazardous air pollutants which the source emits. More detailed information can be found in the review report.

Table 2

Hazardous Air Pollutants	Projected Annual Emissions (tons/year)	Potential to Emit (tons/year)
Lead	0.0036	0.0036
Mercury	0.0032	0.0032
Cadmium	0.0009	0.0009
Hydrogen Chloride (HCl)	14.3	14.3
Dioxins/Furans	1.1x10 ⁻⁶	1.1x10 ⁻⁶
Total	14.3	14.3

For more information about hazardous air pollutants, go to:

<https://www.epa.gov/haps/health-effects-notebook-hazardous-air-pollutants>



OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

OREGON TITLE V OPERATING PERMIT

Western Region
4026 Fairview Industrial Drive SE
Salem, OR 97302
Telephone (503) 378-8240

Issued in accordance with the provisions of ORS 468A.040
and based on the land use compatibility findings included in the permit record.

ISSUED TO:

Covanta Marion, Inc.
P.O. Box 9126
Brooks, OR 97305

INFORMATION RELIED UPON:

Application Number: 28589
Received: 03/30/16
Updated: 05/02, 07, 09/19
8/20/19

PLANT SITE LOCATION:

4850 Brooklake Road NE
Brooks, OR 97305

LAND USE COMPATIBILITY STATEMENT:

Issued by: Marion County
Dated: 8/29/83

ISSUED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY

Claudia Davis, Western Region Air Quality Manager

Date

Nature of Business:

Municipal waste combustor plant with two combustor units each rated at greater than 250 tons per day. Although the facility is capable of generating up to 13.1 MW of electricity, it is not defined as an "Electrical Generation Unit"

SIC: 4953

NAICS: 562213

RESPONSIBLE OFFICIALS

Title: Facility Manager, Covanta Marion, Inc.
Title: Operations Manager, Covanta Marion, Inc.
Title: Vice President, Environmental, Sustainability, and Permitting, Covanta Systems, LLC
Title: Vice President, Regional Operations, Covanta Systems, LLC

FACILITY CONTACT PERSON

Name: Scott Anderson
Title: Facility Manager
Phone: (503) 393-0890

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LIST OF ABBREVIATIONS USED IN THIS PERMIT

ACDP	Air Contaminant Discharge Permit	M	thousand
Act	Federal Clean Air Act	MACT	Maximum Achievable Control
ASTM	American Society of Testing and Materials	MB	Technology
BACT	Best Available Control Technology	Mgal	material balance
BDT	Bone Dry Tons	MMBtu	one thousand gallons
BDU	Bone Dry Units	MMft ³	one million British thermal units
Btu	British thermal unit	NA	one million cubic feet
CAM	Compliance Assurance Monitoring	NCG	Not applicable
CEMS	Continuous Emissions Monitoring System	NO _x	Non condensable gases
CFR	Code of Federal Regulations	NSPS	Nitrogen oxides
CMS	Continuous Monitoring System	NSR	New Source Performance Standards
CO ₂ e	Carbon dioxide equivalent	O ₂	New Source Review
CO	Carbon Monoxide	ODT	Oxygen
COMS	Continuous Opacity Monitoring System	OAR	Oven dried tons
CPMS	Continuous parameter monitoring system	ODEQ	Oregon Administrative Rules
DEQ	Department of Environmental Quality	ORS	Oregon Department of Environmental Quality
dscf	Dry standard cubic feet	PCD	Oregon Revised Statutes
dscfm	Dry standard cubic feet per minute	PM	Operation and maintenance
EF	Emission factor	PM _{2.5}	Lead
EPA	US Environmental Protection Agency	PM ₁₀	Pollution Control Device
ESP	Electrostatic precipitator	PM ₁₀	Particulate matter
EU	Emissions Unit	ppm	Particulate matter less than 2.5 microns in size
FCAA	Federal Clean Air Act	PSD	Particulate matter less than 10 microns in size
FSA	Fuel sampling and analysis	PSEL	Parts per million
ft ³	cubic feet	scf	Prevention of Significant Deterioration
GHG	Greenhouse Gases	scfm	Plant Site Emission Limit
gpm	gallons per minute	SERP	standard cubic foot
g/dscm	gram per dry standard cubic meter	SIC	standard cubic foot per minute
gr/dscf	Grain per dry standard cubic feet (1 pound = 7000 grains)	SO ₂	Source Emissions Reduction Plan
HAP	Hazardous Air Pollutant as defined by OAR 340-244-0040	SSM plan	Standard Industrial Code
HCFC	Halogenated Chloro-Fluoro- Carbons	ST	Sulfur dioxide
ID	Identification label	TRS	Startup, Shutdown, and Malfunction Plan
I&M	Inspection and maintenance	VE	Source test
lb	pound	VMT	Total Reduced Sulfur
kg	kilogram	VOC	Visible emissions
			Vehicle miles traveled
			Volatile organic compounds

PERMITTED ACTIVITIES

1. Until such time as this permit expires or is modified or revoked, the permittee is allowed to discharge air contaminants from those processes and activities directly related to or associated with air contaminant source(s) in accordance with the requirements, limitations, and conditions of this permit. [OAR 340-218-0010 and 340-218-0120(2)]
2. All conditions in this permit are federally enforceable meaning that they are enforceable by DEQ, EPA, and citizens under the Clean Air Act, except Conditions 5, 6, 7, 30, 55, 65, G5, and G9 (OAR 340-248-0005 through 340-248-0180) are only enforceable by the state. [OAR 340-218-0060]

EMISSIONS UNIT (EU) AND POLLUTION CONTROL DEVICE (PCD) IDENTIFICATION

3. The emissions units regulated by this permit are the following [OAR 340-218-0040(3)]:

Emissions Unit	EU ID	Pollution Control Device/Practice	PCD ID
Municipal waste combustor unit 1	MWC-1	Baghouse Spray Dryer Absorber Dry Activated Carbon Injection Selective Non-catalytic Reduction	C-1 C-3 C-5 C-6
Municipal waste combustor unit 2	MWC-2	Baghouse Spray Dryer Absorber Dry Activated Carbon Injection Selective Non-catalytic Reduction	C-2 C-4 C-5 C-6
Municipal waste combustor-Facility Total for calculating the facility wide PSEL	MWC-FT	N/A	N/A
Categorically Insignificant Activities including <u>Reciprocating Internal Combustion Engines</u>	RICE	None	NA[JT1]
Aggregate Insignificant emissions including fugitive dust emissions from vehicle traffic on paved roads and material handling of lime and carbon	AI	None	NA

EMISSION LIMITS AND STANDARDS, TESTING, MONITORING, AND RECORDKEEPING REQUIREMENTS

The following tables and conditions contain the applicable requirements along with the testing, monitoring, and recordkeeping requirements for the emissions units to which those requirements apply.

Facility-wide Requirements**Table 1. Summary of Facility-wide Emission Limits and Standards**

Applicable Requirement	Condition No.	Pollutant/Parameter	Limit/Standard	Monitoring Requirements	
				Method	Condition No.
OAR 340-208-0210(1) and 1991 ACDP condition 10	4	Fugitive emissions	Minimize	Complaint investigation	55
OAR 340-208-0300	5	Air contaminants	Not cause a nuisance	Complaint investigation	55
OAR 340-208-0450	6	Particulate fallout	No observable deposition	Complaint investigation	55

Applicable Requirement	Condition No.	Pollutant/Parameter	Limit/Standard	Monitoring Requirements	
				Method	Condition No.
1991 ACDP conditions 8 and 9	7	Tipping floor area	Maintain negative draft in area to boilers	Complaint investigation	55
OAR 340-230-0330	8, 9, 10, 11, and 12	Operator training and certification	Operators must maintain certifications and a training manual must be maintained	Recordkeeping	53 and 54 [JT2]

Fugitive Dust

4. The permittee must not cause, suffer, allow, or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired or demolished; or any equipment to be operated, without taking reasonable precautions to prevent particulate matter from becoming airborne by: [OAR 340-208-0210(1) and 1991 ACDP Condition 10]
 - 4.a. Maintaining paved roads and open storage areas of the plant site in a clean condition.
 - 4.b. Maintaining a cleanup program on the plant site to collect any materials that may be spilled.
 - 4.c. Storing and transporting all materials collected from the boiler grates and the air pollution control equipment in a wetted condition or other method equally or more effective in preventing these materials from becoming airborne.

Nuisance Conditions

5. The permittee must not cause or allow air contaminants from any source to cause a nuisance. Nuisance conditions will be verified by DEQ personnel. [OAR 340-208-0300] This condition is enforceable only by the State.
6. The permittee must not cause or permit the deposition of any particulate matter larger than 250 microns in size at sufficient duration or quantity, as to create an observable deposition upon the real property of another person. [OAR 340-208-0450] This condition is enforceable only by the State.
7. When the municipal waste combustors are operating, the tipping floor area must be maintained on negative draft such that air from the tipping floor area and pit area is utilized as combustion air in the boilers. [1991 ACDP Conditions 8 and 9] This condition is only enforceable by the state.

Certification and Training of Facility Operators

8. Each chief facility operator and shift supervisor must have completed full certification with either the American Society of Mechanical Engineers (ASME) [QRO-1-1994 — see 40 CFR 60.17] or other State approved certification program. If a chief facility operator or shift supervisor is not fully certified, the chief facility operator and shift supervisor must obtain and maintain a current provisional operator certification from either the ASME or other State approved certification and must have scheduled a full certification exam with either the ASME or other State approved certification program. [OAR 340-230-0330(1) and (2)]
9. The permittee must not allow the facility to be operated at any time unless one of the following persons is on duty and at the affected facility: A fully certified chief facility operator, a provisionally certified chief facility operator who is scheduled to take the full certification exam, a fully certified shift supervisor, or a provisionally certified shift supervisor who is scheduled to take the full certification exam. [OAR 340-230-0330(3)]
 - 9.a. If both the certified chief facility operator and certified shift supervisor are unavailable, a provisionally certified control room operator on site at the facility may fulfill the certified operator

requirement. Depending on the length of time that a certified chief facility operator and certified shift supervisor are away, the owner or operator of the facility must meet one of the following three criteria: [OAR 340-230-0330(3)(a)]

- 9.a.i. When the certified chief facility operator and certified shift supervisor are both off site for 12 hours or less, and no other certified operator is on site, the provisionally certified control room operator may perform the duties of the certified chief facility operator or certified shift supervisor.
- 9.a.ii. When the certified chief facility operator and certified shift supervisor are off site for more than 12 hours, but for two weeks or less, and no other certified operator is on site, the provisionally certified control room operator may perform the duties of the certified chief facility operator or certified shift supervisor without notice or approval. However, the owner or operator must record the period when the certified chief facility operator and certified shift supervisor are off site and include that information in the annual report.
- 9.a.iii. When the certified chief facility operator and certified shift supervisor are off site for more than two weeks, and no other certified operator is on site, the provisionally certified control room operator may perform the duties of the certified chief facility operator or certified shift supervisor without approval. However, the owner or operator must take the following two actions:
 - 9.a.iii.(1) Notify DEQ in writing. In the notice, state what caused the absence and what actions are being taken by the owner or operator to ensure that a certified chief facility operator or certified shift supervisor is on site as expeditiously as practicable; and
 - 9.a.iii.(2) Submit a status report and corrective action summary to DEQ every four weeks following the initial notification. If DEQ provides notice that the status report or corrective action summary is disapproved, the municipal waste combustion unit may continue operation for 90 days, but then must cease operation. If corrective actions are taken in the 90-day period such that DEQ withdraws the disapproval, municipal waste combustion unit operation may continue.
- 9.b. A provisionally certified operator who is newly promoted or recently transferred to a shift supervisor position or a chief facility operator position at the municipal waste combustion unit may perform the duties of the certified chief facility operator or certified shift supervisor without notice to, or approval by DEQ, for up to six months before taking the ASME QRO certification exam. Notification to DEQ may extend this six month period if scheduling difficulties delay the ASME QRO certification exam. [OAR 340-230-330(3)(b)]
10. The permittee must develop and update on a yearly basis a site-specific operating manual that, at a minimum, addresses the elements of municipal waste combustor unit operation specified below: [OAR 340-230-0330(4)]
 - 10.a. A summary of the applicable standards under OAR 340-230-0310 through 340-230-0335.
 - 10.b. A description of basic combustion theory applicable to a municipal waste combustor unit.
 - 10.c. Procedures for receiving, handling, and feeding municipal solid waste.
 - 10.d. Municipal waste combustor unit startup, shutdown, and malfunction procedures.

- 10.e. Procedures for maintaining proper combustion air supply levels.
- 10.f. Procedures for operating the municipal waste combustor unit within the standards established under OAR 340-230-0310 through 340-230-0335.
- 10.g. Procedures for responding to periodic upset or off-specification conditions.
- 10.h. Procedures for minimizing particulate matter carryover.
- 10.i. Procedures for handling ash.
- 10.j. Procedures for monitoring municipal waste combustor unit emissions.
- 10.k. Reporting and recordkeeping procedures.

11. The permittee must establish a training program to review the operating manual according to the schedule specified below with each person who has responsibilities affecting the operation of an affected facility including, but not limited to, chief facility operators, shift supervisors, control room operators, ash handlers, maintenance personnel, and crane/load handlers. [OAR 340-230-0330(5)]

- 11.a. Each person specified in this condition must undergo initial training no later than the date prior to the day the person assumes responsibilities affecting municipal waste combustor unit operation and
- 11.b. Annually, following the initial review.

12. The operating manual required by Condition 10 must be kept in a readily accessible location for all persons required to undergo training under Condition 11. The operating manual and records of training must be available for inspection by the EPA or DEQ upon request. [OAR 340-230-0330(6)]

Table 2. Emissions Units MWC-1 and MWC-2 Specific Emission Limits and Standards Summary

Applicable Requirement	Condition Number	Pollutant/Parameter	Limit/Standard	Monitoring Requirements	
				Method	Condition No.
OAR 340-230-0310(2)	14	Visible emissions	10% opacity, 6 min. avg.	COMS	57
OAR 340-230-0310(8) and 340-230-0335	15	Fugitive ash emissions	Visible emissions \leq 5% of observation period	Annual VE observations	44
OAR 340-228-0210(2)(b)(A)	16	PM	0.10 grains/dscf @ 12% CO ₂	Annual ST	39
OAR 340-230-0310(1)	17	PM	25 mg/dscm @ 7% O ₂	Annual ST	39
OAR 340-230-0310(3)(a)	18	Cd	0.020 mg/dscm @ 7% O ₂	Annual ST	40
OAR 340-230-310(3)(b)	19	Pb	0.20 mg/dscm @ 7% O ₂	Annual ST	40
OAR 340-230-0310(3)I	20	Hg	0.050 mg/dscm @ 7% O ₂ or 85% reduction	Annual ST and carbon injection CPMS	41 and 63
OAR 340-230-310(4)	21	SO ₂	29 ppm @ 7% O ₂ or 75% reduction, 24-hr daily geometric mean	SO ₂ CEMS	58
OAR 340-230-0310(5)	22	HCl	29 ppm @ 7% O ₂ or 95% reduction	Annual ST	42

Applicable Requirement	Condition Number	Pollutant/Parameter	Limit/Standard	Monitoring Requirements	
				Method	Condition No.
OAR 340-230-0310(6)(c)	23	Dioxins/furans	15 ng/dscm @7% O ₂	ST, unit load and PM PCD inlet temp. CPMS Bi-annual ST on each unit	43, 61, and 62
OAR 340-230-0310(7)	24	NO _x	205 ppm @ 7% O ₂ , 24-hr daily arithmetic mean	NO _x CEMS	59
OAR 340-230-0320(1) and 340-230-0340(9)(a)	25	CO	100 ppm @7% O ₂ , 4-hr block arithmetic average	CO CEMS	60
OAR 340-230-0320(2)	26	Load level	TBD, 4-hr block arithmetic average	Steam CPMS	61
OAR 340-230-0320(3)	27	Baghouse inlet temperature	TBD, 4-hr block arithmetic average	Temperature CPMS	62
OAR 340-230-0340(12)(b)	28	Carbon feed rate	TBD, 8-hr block arithmetic average	Carbon CPMS	63
OAR 340-230-0340(1)(a-c) and 340-230-0340(2)(g)	29	Standards in Conditions 14, 15, and 17 through 28	Do not apply during startup, shutdown, or malfunction periods in accordance with Condition 29	NA	NA
1991 ACDP condition 12	30	Scrubbers and Baghouses	Maintain parameter monitoring devices and maintain 30 spare bags on site	Recordkeeping	65

Visible Emissions

13. Reserved.
14. Visible emissions from each municipal waste combustor unit (MWC-1 and MWC-2) must not exceed 10 percent opacity as a 6-minute average. [OAR 340-230-0310(2) and 340-208-0110(4)]
15. The permittee must not cause or allow visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) in excess of 5 percent of the observation period (i.e., 9 minutes per 3-hour period), as determined by EPA Reference Method 22 observations, except as provided below: [OAR 340-230-0310(8) and 340-230-0335]
 - 15.a. The emission limit does not cover visible emissions discharged inside buildings or enclosures of ash conveying systems. However, the emission limit does cover visible emissions discharged to the atmosphere from buildings or enclosures of ash conveying systems.
 - 15.b. The provisions of this condition do not apply during maintenance and repair of the ash conveying systems or during periods when the associated municipal waste combustor system is not operating.

Particulate Matter

16. The permittee must not cause or allow the emissions of particulate matter in excess of 0.10 grains/dscf corrected to 12% CO₂ from each municipal waste combustor unit (MWC-1 and MWC-2) as measured by ODEQ Method 5. [OAR 340-228-0210(2)(b)(A)]
17. Particulate emissions from each municipal waste combustor unit (MWC-1 and MWC-2) must not exceed 25 milligrams per dry standard cubic meter (0.011 gr/dscf) corrected to 7 percent oxygen as measured by EPA Method 5. [OAR 340-230-0310(1)]

Cadmium

18. Cadmium emissions from each municipal waste combustor unit (MWC-1 and MWC-2) must not exceed 0.020 milligrams per dry standard cubic meter (0.000008 gr/dscf) corrected to 7 percent oxygen. [OAR 340-230-0310(3)(a)]

Lead

19. Lead emissions from each municipal waste combustor unit (MWC-1 and MWC-2) must not exceed 0.20 milligrams per dry standard cubic meter (0.00009 gr/dscf) corrected to 7 percent oxygen. [OAR 340-0230-0310(3)(b)]

Mercury

20. Mercury emissions from each municipal waste combustor unit (MWC-1 and MWC-2) must not exceed 0.050 milligrams per dry standard cubic meter (0.000022 gr/dscf) or 15 percent of the potential mercury emission concentration (85 percent reduction by weight), corrected to 7 percent oxygen, whichever is less stringent. [OAR 340-230-0310(3)(c)]

Sulfur Dioxide

21. Sulfur dioxide emissions from each municipal waste combustor unit (MWC-1 and MWC-2) must not exceed 29 parts per million by volume or 25 percent of the potential sulfur dioxide emission concentration (75 percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent. Compliance with this emission limit is based on a 24-hour daily geometric mean. [OAR 340-0230-310(4)]

Hydrogen Chloride

22. Hydrogen chloride emissions from each municipal waste combustor unit (MWC-1 and MWC-2) must not exceed 29 parts per million by volume or 5 percent of the potential hydrogen chloride emission concentration (95 percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent. [OAR 340-0230-0310(5)]

Dioxins/Furans

23. The dioxins/furans emissions from each municipal waste combustor unit (MWC-1 and MWC-2) must not exceed 15 nanograms per dry standard cubic meter (total mass) corrected to 7 percent oxygen. [OAR 340-230-0310(6)(c)]

Nitrogen Oxide

24. Nitrogen oxide emissions from each municipal waste combustor unit (MWC-1 and MWC-2) must not exceed 205 ppm as a 24-hour daily arithmetic average corrected to 7 percent oxygen (dry basis). [OAR 340-230-0310(7)]

Carbon Monoxide

25. Emissions of carbon monoxide from each municipal waste combustor unit (MWC-1 and MWC-2) must not exceed 100 ppm corrected to 7 percent oxygen as a 4-hour block arithmetic average. [OAR 340-230-0320(1) and 340-230-0340(9)(a)]

Load Level

26. The permittee must not cause each municipal waste combustor unit (MWC-1 and MWC-2) to operate at a load level greater than 110 percent of the maximum demonstrated municipal waste combustor unit load as determined by Condition 61, except as specified in Condition 38. The averaging time must be a 4-hour block arithmetic average. [OAR 340-230-0320(2)]

Particulate Matter Control Device Temperature

27. The permittee must not cause each municipal waste combustor unit (MWC-1 and MWC-2) to operate at a temperature, measured at the particulate matter control device inlet, exceeding 17°C (30 °F) above the maximum demonstrated particulate matter control device temperature as determined by Condition 62, except as specified in Condition 38. The averaging time must be a 4-hour block arithmetic average. The requirements of this condition apply to each MWC particulate matter control device utilized at the facility. [OAR 340-230-0320(3)]

Carbon Feed Rate

28. The permittee must not cause each municipal waste combustor unit (MWC-1 and MWC-2) to operate at a carbon feed rate less than that determined by Condition 63, except as specified in Condition 38. The averaging time must be a 8-hour block arithmetic average. [OAR 340-230-340(12)(b)]

Startup, Shutdown, Malfunction Exemption

29. The standards in Conditions 14, 15, and 17 through 28 apply at all times except during periods of startup, shutdown, and malfunction. The duration of startup, shutdown, or malfunction periods is limited to 3 hours per occurrence, except as provided by Condition 29.c. During periods of startup, shutdown, or malfunction, monitoring data must be dismissed or excluded from compliance calculations, but must be recorded and reported in accordance with Conditions 72.f and 78.b.iii. [OAR 340-230-0340(1)(a-c) and (2)(g)]

29.a. The startup period commences when the affected facility begins the continuous burning of municipal solid waste and does not include any warmup period when the affected facility is combusting fossil fuel or other non municipal solid waste fuel, and no municipal solid waste is being fed to the combustor.

29.b. Continuous burning is the continuous, semicontinuous, or batch feeding of municipal solid waste for purposes of waste disposal, energy production, or providing heat to the combustion system in preparation for waste disposal or energy production. The use of municipal solid waste solely to provide thermal protection of the grate or hearth during the startup period when municipal solid waste is not being fed to the grate is not considered to be continuous burning.

29.c. For purposes of compliance with the carbon monoxide emissions limits in Condition 25, if a loss of boiler water level control (e.g., boiler waterwall tube failure) or a loss of combustion air control (e.g., loss of combustion air fan, induced draft fan, combustion grate bar failure) is determined to be a malfunction, the duration of the malfunction period is limited to 15 hours per occurrence. During such periods of malfunction, monitoring data must be dismissed or excluded from compliance calculations, but must be recorded and reported in accordance with Conditions 72.f and 78.b.iii. During a loss of boiler water level control or loss of combustion air control malfunction period, a diluent cap of 14 percent for oxygen or 5 percent for carbon dioxide may be used in the emissions calculations for sulfur dioxide, nitrogen oxides, and carbon monoxide.

Pollution Control Devices

30. The permittee must operate and maintain scrubber and baghouse monitoring systems to demonstrate continuous operation of each control system during the time that solid waste is being combusted. The permittee must maintain at least 30 spare bags for the baghouses and replace the spares that are used in a timely manner. [1991 ACDP Condition 12 revised] This condition is only enforceable by the State.

Insignificant Activities Requirements

31. DEQ acknowledges that insignificant emissions units (IEUs) identified by rule as either categorically insignificant activities or aggregate insignificant emissions [OAR 340-200-0020] exist at facilities required to obtain an Oregon Title V Operating Permit. IEUs must comply with all applicable requirements. In general, the requirements that could apply to IEUs are incorporated as follows:

- 31.a. OAR 340-208-0110 (20% opacity)
- 31.b. OAR 340-228-0210 (gr/dscf corrected to 12% CO₂ or 50% excess air for fuel burning equipment)
- 31.c. OAR 340-226-0210 (gr/dscf for non-fugitive, non-fuel burning equipment)
- 31.d. OAR 340-226-0310 (process weight limit for non-fugitive, non-fuel burning process equipment)

Reciprocating Internal Combustion Engine

32. The permittee must comply with all relevant provisions of the Reciprocating Internal Combustion Engine NESHAP (40 CFR Part 63 Subpart ZZZZ) using the following work practices for the emergency fire pump. There is no time limit on emergency operation of the emergency generator. [JT3]

- 32.a. Change oil/filter annually or every 500 hours of operation; whichever comes first or use an oil analysis program to extend the interval for oil changes. [40 CFR 63.6602, 63.6640(a) Table 2c(1), and 63.6625(i)]
- 32.b. Inspect hoses/belts annually or every 500 hours of operation, whichever comes first and replace as necessary. [40 CFR 63.6602 and 63.6640(a) Table 2c(1)]
- 32.c. Inspect air cleaner annually or every 1000 hours or annually, whichever comes first. [40 CFR 63.6602 and 63.6640(a) Table 2c(1)]
- 32.d. Install non-resettable hour meter. [40 CFR 63.6625(f)]
- 32.e. Maintain engine in accordance with manufacturer's emissions-related written instructions or develop site-specific maintenance plan. [40 CFR 63.6625I(2)]
- 32.f. Minimize engine idle time and limit startup time to less than 30 minutes. [40 CFR 63.6625(h) and Table 2c]
- 32.g. Non-emergency operation cannot exceed 50 hours per year. [40 CFR 63.6640(f)(3)]
- 32.h. Maintenance and testing hours are limited to less than 100 hours per year. [40 CFR 63.6640(f)(2)(i)]
- 32.i. Operate consistent with good air pollution practices to minimize emissions as practicable per Table 6.9 [40 CFR 63.6605(a) and (b) and 63.6640(a)]
- 32.j. Record hours of emergency and non-emergency operation. [40 CFR 63.6655(d)-(f)]
- 32.k. Maintain records for 5 years in readable available format. [40 CFR 63.6660a-c]

Unless otherwise specified in this permit or an applicable requirement, DEQ is not requiring any testing, monitoring, recordkeeping, or reporting for the applicable emissions limits and standards that apply to IEUs. However, if testing were performed for compliance purposes, the permittee would be required to use the test methods identified in and perform the testing in accordance with DEQ's Source Sampling Manual.

PLANT SITE EMISSION LIMITS

33. The plant site emissions must not exceed the following limits for any 12 consecutive calendar month period: [OAR 340-222-0035 through OAR 340-222-0041]

Pollutant	Plant Site Emission Limit	Unassigned
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	(tons/year)	Emissions (tons/year)
PM	24	25
PM ₁₀	16	13
PM _{2.5}	16	10
CO	99	71
NO _x	337	23
SO ₂	39	40
VOC	39	0
MWC Acid Gases (HCl + SO ₂)	42	40
MWC Organics (Dioxins/Furans)	3.0E-06	3.5E-06
GHG (CO ₂ e)	214,400	0

33.a. The permittee may only use Unassigned Emissions after any necessary construction (OAR 340-218-0190) and permit revision applications (OAR 340-218-0120 through 340-218-0180) have been approved by DEQ.

Plant Site Emission Limits Monitoring

34. The permittee must determine compliance with the Plant Site Emission Limits for all pollutants, except GHGs, established in Condition 33 by conducting monitoring in accordance with the following procedures, test methods, and frequencies:

34.a. Emission calculations must be performed each month for the preceding 12 consecutive calendar months.

34.b. The permittee must maintain records of the following process parameters:

Emissions Unit	Process Parameter	Units	Frequency
MWC-1 & -2	Steam production by unit	Klbs	monthly and annually
	Boiler operation time by unit	Hours	monthly and annually
	Municipal waste combusted by unit	Tons	monthly and annually
	Total natural gas usage	Cubic feet	monthly and annually
	Total medical waste combusted	Tons	monthly and annually

34.c. The permittee must calculate SO₂, NO_x, and CO mass emissions for each month and 12 consecutive month period using the following equation to determine the emissions for a given hour. Total tons of emissions for each month and 12 consecutive month period for each pollutant is the sum of all hourly emissions for that pollutant divided by 2000.

$$E = C_d/1000000 \times MW/385.3 \times F_d \times 20.9/(20.9\%O_{2d}) \times K \times S$$

where:

E = Pollutant mass emissions (lb/hr);

C_d = Pollutant concentration (ppm, dry) as measured by the CEMS but not corrected to 7% oxygen;

MW = molecular weight of pollutant:

= 28 lb/lb moles for CO,

= 46 lb/lb moles for NO_x ,

= 64 lb/lb moles for SO_2 ;

F_d = Oxygen based fuel factor, dry basis
= 9,595 dscf/million Btu heat input;

$\%O_{2d}$ = Dry oxygen concentration as measured by the CEMS;

K = design heat conversion constant

= 1.608 million Btu input/1000 lb of steam output;

S = steam flow (klbs/hr)

34.d. The permittee must calculate for each month and 12 consecutive month period the total emissions of PM, PM_{10} , $PM_{2.5}$, HCl, and MWC Organics using the following formula, the process parameter measurements identified in Condition 34.b, and the emission factors listed in Condition 34.f:

$$E = [P_{eu} \times EF_{eu} \times K] + AI$$

where:

E = pollutant emissions in tons/month and tons/year

P_{eu} = total steam production for the period (thousand pounds)

EF_{eu} = emission factor identified for each pollutant in Condition 34.f

K = conversion constant: 1 ton/2000 lbs

AI = 1 ton/year for PM, PM_{10} , and $PM_{2.5}$

34.e. The permittee must calculate MWC acid gas mass emissions for each month and 12 consecutive month period by summing the results for SO_2 emissions obtain in Condition 34.c. and the results for HCl emissions obtained in Condition 34.d.

34.f. Emission factors for calculating pollutant emissions:

Pollutant	Annual Emission Factor	Units
PM/ PM_{10} / $PM_{2.5}$	0.0225	lb/1000 lb steam
Hydrogen chloride (HCl)	0.022	lb/1000 lb steam
MWC Organics (Dioxins/Furans)	1.69×10^{-9}	lb/1000 lb steam

34.g. The emissions factors listed in Condition 34.f are not enforceable limits unless otherwise specified in this permit. The permittee may request or DEQ may require using alternative emission factors provided they are based on actual test data or other documentation that has been reviewed and approved by DEQ.

[JT4]

TESTING REQUIREMENTS

General

35. Unless otherwise specified in this permit, the permittee must conduct all testing in accordance with DEQ's Source Sampling Manual. [OAR 340-212-0120(3) and 340-230-0340]

35.a. Unless otherwise specified by a state or federal regulation, the permittee must submit a source test plan to DEQ at least 30 days prior to the date of the test. The test plan must be prepared in accordance with the Source Sampling Manual and address any planned variations or alternatives to prescribed test methods. The permittee should be aware that if significant variations are requested, it may require more than 30 days for DEQ to grant approval and may require EPA approval in addition to approval by DEQ.

35.b. Except as allowed under Condition 38.a., only regular operating staff may adjust the processes or emission control device parameters during a compliance source test and within two (2) hours prior to the tests. Any operating adjustments made during a compliance source test, which are a result of consultation during the tests with source testing personnel, equipment vendors, or consultants, may render the source test invalid.

35.c. Unless otherwise specified by permit condition or DEQ approved source test plan, all compliance source tests must be performed under full load operating conditions as follows:

35.c.i. at least 90% of the design capacity for new or modified equipment;

35.c.ii. at least 90% of the maximum operating rate for existing equipment; or

35.c.iii. at 90 to 110% of the normal maximum operating rate for existing equipment. For purposes of this permit, the normal maximum operating rate is defined as the 90th percentile of the average hourly operating rates during a 12 month period immediately preceding the source test. Data supporting the normal maximum operating rate must be included with the source test report.

35.d. Each source test must consist of at least three (3) test runs and the emissions results must be reported as the arithmetic average of all valid test runs. If for reasons beyond the control of the permittee a test run is invalid, DEQ may accept two (2) test runs for demonstrating compliance with the emission limit or standard.

35.e. Source test reports prepared in accordance with the DEQ's Source Sampling Manual must be submitted to DEQ within 60 days of completing any required source test, unless a different time period is approved in the source test plan submitted prior to the source test.

35.f. For purposes of the performance testing requirements in this permit, each performance test must be conducted on a calendar year basis (no less than 9 calendar months and no more than 15 calendar months following the previous performance test). The permittee must complete five performance tests in each 5-year calendar period. [OAR 340-230-340(3)(h), (3)(j), (4)(a)(G), (4)(b)(H), (6)(f), (7)(d)(A), and 11(c)]

36. Except as otherwise allowed by Condition 36.d. below, the permittee must conduct performance tests for particulate matter, opacity, cadmium, lead, mercury, hydrogen chloride, and dioxins/furans, on each municipal waste combustor unit in accordance with Condition 35.f. and the following: [OAR 340-230-0340(3)(h), (3)(j), (4)(a)(G), (4)(b)(H), (6)(f), and (7)(d)(A)]

- 36.a. EPA Reference Method 1 must be used to select the sampling site and number of traverse points. [OAR 340-230-0340(3)(a), (4)(a)(A), (4)(b)(A), and (7)(a)]
- 36.b. EPA Reference Method 3, 3A, or 3B, or as an alternative ASME PTC-19-10-1981-Part 10, as applicable, must be used for flue gas analysis. [OAR 340-230-0340(3)(b), (4)(a)(B), (4)(b)(B), and (7)(b)]
- 36.c. All performance tests must consist of at least three test runs conducted under representative full load operating conditions. The average of the measured emission concentration from all valid test runs is used to determine compliance. [OAR 340-230-0340(3)(e), (4)(a)(F), (4)(b)(F), (6)(e), and (7)(h)]
- 36.d. Should the permittee decide to employ continuous emission monitors for particulate matter, cadmium, lead, mercury, hydrogen chloride, or dioxins/furans, the permittee must comply with the continuous emission monitoring requirements for such devices as specified in OAR 340-230-0340 and 0350.
37. In accordance with Condition 35.e, the permittee must submit a performance test report for particulate matter, opacity, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash emissions that includes the following: [OAR 340-230-0350(2)]
 - 37.a. The test results for particulate matter, opacity (6-minute blocks as measured by the COMS during the PM test), cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash emissions in units of the standards and (except for opacity and fugitive emissions) in units of pounds per hour and pounds per 1000 pounds steam produced.
 - 37.b. Oxygen/carbon dioxide relationship established in accordance with Condition 56.e, if applicable.
 - 37.c. Data as recorded under Condition 72.b.i during each Method 5 test run and data as recorded under Conditions 72.b.vi through 72.b.ix for the days coinciding with each performance test.
 - 37.d. The maximum demonstrated municipal waste combustor unit load and maximum demonstrated particulate matter control device inlet temperature(s) established during the dioxins/furans performance test.
 - 37.e. The average carbon mass feed rate recorded during the mercury performance test.
 - 37.f. Amount of medical waste burned in the municipal waste combustor unit during dioxin/furan performance testing.
38. During the annual mercury and/or dioxins/furans performance tests and the 2 weeks preceding the tests, no municipal waste combustor unit carbon feed rate or usage, particulate matter control device temperature, and/or load level limitations are applicable if the following condition is met:
 - 38.a. The municipal waste combustor unit carbon feed rate or usage, particulate matter device temperature, and/or load level limitations may be waived in writing by the Administrator for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions. [OAR 340-230-0320(2)(a) and (b), (3)(a) and (b), and 340-230-0340(12)(b)(A) and (B)]

Particulate Matter Testing

39. The procedures and test methods specified below must be used to determine compliance with the emission limits for particulate matter. [OAR 340-230-0340(3)]

- 39.a. EPA Reference Method 5 must be used for determining compliance with the particulate matter emission limit in Condition 17. The minimum sample volume must be 1.7 cubic meters (60 cubic feet). The probe and filter holder heating systems in the sample train must be set to provide a gas temperature not greater than 160 °C (320 °F). An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 5 run.
- 39.b. The permittee may request that compliance with the particulate matter emission limit in Condition 17 be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility must be established as specified in Condition 56.e.
- 39.c. For determining compliance with the particulate matter concentration limit in Condition 16, ODEQ Method 5 must be used to measure the particulate matter emissions. However, a single sample train may be used for the EPA Method 5 and ODEQ Method 5 tests. Where there is a conflict between the two test methods, EPA Method 5 and the procedures identified above must govern. The ODEQ Method 5 test results must be corrected to 12% CO₂ using the following equation:

$$C_{12} = C_S (12 / \%CO_2)$$

where:

C₁₂ = concentration of particulate matter, corrected to 12 percent CO₂, (gr/dscf).

C_S = concentration of particulate matter as measured by ODEQ Method 5 (gr/dscf).

%CO₂ = CO₂ concentration, percent dry basis, as determined in accordance with EPA Method 3, 3A, or 3B.

Cadmium and Lead Testing

40. The procedures and test methods specified below must be used to determine compliance with the emission limits for cadmium and lead. [OAR 340-230-0340(4)(a)]

- 40.a. EPA Reference Method 29 must be used for determining compliance with the cadmium and lead emission limits. The minimum sample volume must be 1.7 dscm (60 dscf).
- 40.b. An oxygen or carbon dioxide measurement must be obtained simultaneously with each Method 29 test run for cadmium and lead.
- 40.c. The permittee may request that compliance with the cadmium or lead emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility must be established as specified in Condition 56.e.

Mercury Testing

41. The procedures and test methods specified below must be used to determine compliance with the emission limit for mercury. [OAR 340-230-0340(4)(b)]

- 41.a. EPA Reference Method 29 or as an alternative ASTM D6784-02 must be used to determine the mercury emission concentration. The minimum sample volume must be 1.7 dscm (60 dscf).

- 41.b. An oxygen (or carbon dioxide) measurement must be obtained simultaneously with each Method 29 or ASTM D6784-02 test run for mercury.
- 41.c. The percent reduction in the potential mercury emissions ($\%P_{Hg}$) is computed using the following equation:

$$(\%P_{Hg}) = [(E_i - E_o) / E_i] \times 100$$

where:

$\%P_{Hg}$ = percent reduction of the potential mercury emissions achieved.

E_i = potential mercury emission concentration measured at the control device inlet, corrected to 7 percent oxygen (dry basis).

E_o = controlled mercury emission concentration measured at the mercury control device outlet, corrected to 7 percent oxygen (dry basis).

- 41.d. The permittee may request that compliance with the mercury emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility must be established as specified in Condition 56.e.
- 41.e. Where activated carbon injection is used to comply with the mercury emission limit, the permittee must follow the procedures specified in Condition 63 for measuring and calculating carbon usage.

Hydrogen Chloride Testing

- 42. The procedures and test methods specified below must be used to determine compliance with the hydrogen chloride emission limit. [OAR 340-230-0340(6)]
- 42.a. EPA Reference Method 26 or 26A, as applicable, must be used to determine the hydrogen chloride emission concentration. The minimum sampling time must be 1 hour.
- 42.b. An oxygen (or carbon dioxide) measurement must be obtained simultaneously with each Method 26 or 26A test run for hydrogen chloride.
- 42.c. The percent reduction in potential hydrogen chloride emissions ($\%P_{HCl}$) is computed using the following equation:

$$(\%P_{HCl}) = [(E_i - E_o) / E_i] \times 100$$

where:

$\%P_{HCl}$ = percent reduction of the potential hydrogen chloride emissions achieved.

E_i = potential hydrogen chloride emission concentration measured at the control device inlet, corrected to 7 percent oxygen (dry basis).

E_o = controlled hydrogen chloride emission concentration measured at the control device outlet, corrected to 7 percent oxygen (dry basis).

42.d. The permittee may request that compliance with the hydrogen chloride emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility must be established as specified in Condition 56.e.

Dioxins/Furans Testing

43. The procedures and test methods specified below must be used to determine compliance with the limits for dioxins/furans emissions. [OAR 340-230-0340(7)]

43.a. EPA Reference Method 23 must be used for determining the dioxins/furans emission concentration.

43.a.i. The minimum sample time must be 4 hours per test run.

43.a.ii. An oxygen (or carbon dioxide) measurement must be obtained simultaneously with each Method 23 test run for dioxins/furans.

43.b. The permittee must conduct performance tests for dioxin/furan emissions either on an annual basis as specified in Condition 35.f or as follows. Where all performance tests over a 2-year period indicate that dioxins/furans emissions are less than or equal to 7 nanograms per dry standard cubic meter (total mass) corrected to 7 percent oxygen for all municipal waste combustor units located within the municipal waste combustor plant, the permittee may elect to conduct annual performance tests for one municipal waste combustor unit per year at the municipal waste combustor plant. At a minimum, a performance test for dioxins/furans emissions must be conducted in accordance with Condition 35.f for one municipal waste combustor unit at the municipal waste combustor plant. Each year a different municipal waste combustor unit at the municipal waste combustor plant must be tested, and the municipal waste combustor units at the plant must be tested in sequence (e.g., unit 1, unit 2). If each annual performance test continues to indicate a dioxins/furans emission level less than or equal to 7 nanograms per dry standard cubic meter (total mass) corrected to 7 percent oxygen, the permittee may continue conducting a performance test on only one municipal waste combustor unit per year. If any annual performance test indicates a dioxins/furans emission level greater than 7 nanograms per dry standard cubic meter (total mass) corrected to 7 percent oxygen, performance tests thereafter must be conducted annually on all municipal waste combustor units at the plant until and unless all annual performance tests for all municipal waste combustor units at the plant over a 2-year period indicate a dioxins/furans emission level less than or equal to 7 nanograms per dry standard cubic meter (total mass) corrected to 7 percent oxygen.

43.c. The permittee may request that compliance with the dioxins/furans emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility must be established as specified in Condition 56.e.

Fugitive Ash Testing

44. The procedures and test methods specified below must be used to determine compliance with the fugitive ash emission limit. [OAR 340-230-0340(11)]

44.a. EPA Reference Method 22 must be used for determining compliance with the fugitive ash emission limit. The minimum observation time must be a series of three 1-hour observations. The observation period must include times when the facility is transferring ash from the municipal waste combustor unit to the area where ash is stored or loaded into containers or trucks.

- 44.b. The average duration of visible emissions per hour must be calculated from the three 1-hour observations. The average must be used to determine compliance with the fugitive ash emission limit.

MONITORING AND RECORDKEEPING REQUIREMENTS

General Monitoring Requirements:

45. The permittee must not knowingly render inaccurate any required monitoring device or method. [OAR 340-218-0050(3)(a)(E)]
46. Methods used to determine actual emissions for fee purposes must also be used for compliance determination and can be no less rigorous than the requirements of OAR 340-218-0080. [OAR 340-218-0050(3)(a)(F)]
47. Monitoring requirements must commence on the date of permit issuance unless otherwise specified in the permit or an applicable requirement. [OAR 340-218-0050(3)(a)(G)]
48. Reserved. [JT5]
49. At a minimum, valid continuous monitoring system hourly averages must be obtained for 90 percent of the operating hours per calendar quarter and 95 percent of the operating hours per calendar year that the municipal waste combustor unit is combusting municipal solid waste. [OAR 340-230-0340(5)(g), (5)(l), (8)(d), (8)(i), (9)(i), and (9)(j)]
 - 49.a. At least two data points per hour must be used to calculate each 1-hour arithmetic average.
 - 49.b. Each continuous monitoring system 1-hour arithmetic average (i.e. SO₂ inlet and outlet, NO_x, and CO) must be corrected to 7 percent oxygen on an hourly basis using the 1-hour arithmetic average of the oxygen (or carbon dioxide) continuous emission monitoring system data.
 - 49.c. When emissions data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks, and/or zero and span adjustments, emissions data must be obtained by using other monitoring systems as approved by DEQ or EPA Reference Method 19 to provide, as necessary, valid emissions data for a minimum of 90 percent of the hours per calendar quarter and 95 percent of the hours per calendar year that the affected facility is operated and combusting municipal solid waste.
50. Except as provided by Condition 29, all valid continuous emission monitoring system data must be used in calculating average emission concentrations and percent reductions even if the minimum continuous emission monitoring system data requirements in Condition 49 are not met. [OAR 340-230-0340(5)(i), (8)(f), and (9)(j)]
51. Quarterly accuracy determinations and daily calibration tests must be performed in accordance with Procedure 1 in Appendix F of 40 CFR Part 60. [OAR 340-230-0340(5)(k), (8)(h), and (9)(k)]
52. The permittee may request that compliance with the sulfur dioxide emission, nitrogen oxides, or carbon monoxide limits be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility must be established as specified in Condition 56.e. [OAR 340-230-0340(5)(c), (8)(b), and (9)(d)]

Facility-wide Monitoring

53. The permittee must maintain records of the certifications and training required by Conditions 8 through 11. [OAR 340-230-0390(1)(a)]

54. The permittee must maintain records of the persons and their titles on duty at all times while the facility is in operation. [OAR 340-218-0050(3)(a)(C)]

55. The permittee must maintain a log for recording all complaints received by a responsible official or a designated appointee that specifically refer to a complaint of fugitive emissions, air quality nuisance conditions, or particulate matter fallout from the permitted facility for monitoring pertaining to Conditions 4, 5, 6 and 7. The log must also include a record of the permittee's actions to investigate, make a determination as to the validity of the complaint, date resolved, and corrective actions taken and to resolve the problem, if possible, within two working days, but not longer than five working days of receiving the complaint. The permittee must immediately notify DEQ of any problem not resolved after 5 days of receiving the complaint. [OAR 340-218-0050(3)(a)(C)] This condition is only enforceable by the state. |

[JT6]

Oxygen/Carbon Dioxide Monitoring

56. The permittee must install, calibrate, maintain, and operate a continuous emission monitoring system for measuring the oxygen or carbon dioxide content of the flue gas at each location where carbon monoxide, sulfur dioxide, or nitrogen oxides emissions are monitored and record the output of the system and must comply with test procedures and test methods specified below. [OAR 340-230-0340(2)]

56.a. The span value of the oxygen (or carbon dioxide) monitor must be 25 percent oxygen (or 20 percent carbon dioxide).

56.b. The monitor must be installed, evaluated, and operated in accordance with 40 CFR 60.13.

56.c. The monitor must conform to Performance Specification 3 in Appendix B of 40 CFR Part 60 except for section 2.3 (relative accuracy requirement).

56.d. The quality assurance procedures of Appendix F of 40 CFR Part 60 except for section 5.1.1 (relative accuracy test audit) shall apply to the monitor.

56.e. If carbon dioxide is selected for use in diluent corrections, the relationship between oxygen and carbon dioxide levels must be established during the initial performance test according to the following procedures and methods. This relationship may be reestablished during subsequent performance compliance tests.

56.e.i. The fuel factor equation in Method 3B must be used to determine the relationship between oxygen and carbon dioxide at a sampling location. EPA Reference Method 3, 3A, 3B, or as an alternative ASME PTC-19-10-1981-Part 10, as applicable, must be used to determine the oxygen concentration at the same location as the carbon dioxide monitor.

56.e.ii. Samples must be taken for at least 30 minutes in each hour.

56.e.iii. Each sample must represent a 1-hour average.

56.e.iv. A minimum of three runs must be performed.

56.f. The relationship between carbon dioxide and oxygen concentrations that is established in accordance with Condition 56.e must be submitted to DEQ as part of the annual performance test report if the relationship is reestablished during the annual performance test.

Opacity Monitoring

57. The permittee must install, calibrate, maintain, and operate a continuous opacity monitoring system for measuring opacity and must follow the methods and procedures specified below: [OAR 340-230-0340(3)(g)]

- 57.a. The output of the continuous opacity monitoring system must be recorded on a 6-minute average block basis.
- 57.b. The continuous opacity monitoring system must be installed, evaluated, and operated in accordance with 40 CFR 60.13.
- 57.c. The continuous opacity monitoring system must conform to Performance Specification 1 in Appendix B of 40 CFR Part 60.

Sulfur Dioxide Monitoring

58. The procedures and test methods specified below must be used for determining compliance with the sulfur dioxide emission limit. [OAR 340-230-0340(5)]

- 58.a. Compliance with the sulfur dioxide emission limit must be determined based on the 24-hour daily geometric average of the hourly arithmetic average emission concentrations using continuous emission monitoring system outlet data if compliance is based on an emission concentration, or continuous emission monitoring system inlet and outlet data if compliance is based on a percent reduction.
- 58.b. EPA Reference Method 19, section 4.3, must be used to calculate the daily geometric average sulfur dioxide emission concentration.
- 58.c. EPA Reference Method 19, section 5.4, must be used to determine the daily geometric average percent reduction in the potential sulfur dioxide emission concentration.
- 58.d. The permittee must install, evaluate, calibrate, maintain, and operate a continuous emission monitoring system for measuring sulfur dioxide emissions discharged to the atmosphere and record the output of the system in accordance with 40 CFR 60.13.
- 58.e. Compliance with the sulfur dioxide emission limit (concentration or percent reduction) must be determined by using the continuous emission monitoring system to measure sulfur dioxide and calculating 24-hour daily geometric average emission concentration or a 24-hour daily geometric average percent reduction using EPA Reference Method 19, sections 4.3 and 5.4, as applicable.
- 58.f. The 1-hour arithmetic averages must be expressed in parts per million corrected to 7 percent oxygen (dry basis) and used to calculate the 24-hour daily geometric average emission concentrations and daily geometric average emission percent reductions. The 1-hour arithmetic averages must be calculated using the data points required under 40 CFR 60.13(e)(2).
- 58.g. The continuous emission monitoring system must be operated according to Performance Specification 2 in Appendix B of 40 CFR Part 60. For sources that have actual inlet emissions less than 100 parts per million dry volume, the relative accuracy criterion for inlet sulfur dioxide continuous emission monitoring systems should be no greater than 20 percent of the mean value of the reference method test data in terms of the units of the emission standard, or 5 parts per million dry volume absolute value of the mean difference

between the reference method and the continuous emission monitoring systems, whichever is greater.

- 58.g.i. During each relative accuracy test run of the continuous emission monitoring system required by Performance Specification 2 in Appendix B of 40 CFR Part 60, sulfur dioxide and oxygen (or carbon dioxide) must be collected concurrently (or within a 30- to -60 minute period) by both the continuous emission monitors and the test methods specified as follows: For sulfur dioxide, EPA Reference Method 6, 6A, or 6C, or as an alternative ASME PTC-19-10-1981-Part 10, must be used; and, for oxygen (or carbon dioxide), EPA Reference Method 3, 3A, or 3B, or as an alternative ASME PTC-19-10-1981-Part 10 must be used.
- 58.g.ii. The span value of the continuous emissions monitoring system at the inlet to the sulfur dioxide control device must be 125 percent of the maximum estimated hourly potential sulfur dioxide emissions of the municipal waste combustor unit. The span value of the continuous emission monitoring system at the outlet of the sulfur dioxide control device must be 50 percent of the maximum estimated hourly potential sulfur dioxide emissions of the municipal waste combustor unit.

Nitrogen Oxides Monitoring

59. The procedures and test methods specified below must be used to determine compliance with the nitrogen oxides emission limit for each municipal waste combustor unit. [OAR 340-230-0340(8)]

- 59.a. Compliance with the nitrogen oxides emission limit must be determined by using the continuous emission monitoring system specified in Condition 59.b for measuring nitrogen oxides and calculating a 24-hour daily arithmetic average emission concentration using EPA Reference Method 19, section 4.1.
- 59.b. The permittee must install, calibrate, maintain, and operate a continuous emission monitoring system for measuring nitrogen oxides discharged to the atmosphere, and record the output of the system.
- 59.c. The 1-hour arithmetic averages must be expressed in parts per million by volume (dry basis) and used to calculate the 24-hour daily arithmetic average emission concentrations. The 1-hour arithmetic averages must be calculated using the data points required under 40 CFR 60.13(e)(2).
- 59.d. The continuous emission monitoring system must be operated according to Performance Specification 2 in Appendix B of 40 CFR Part 60 and must follow the procedures and methods specified below.
 - 59.d.i. During each relative accuracy test run of the continuous emission monitoring system required by Performance Specification 2 in Appendix B of 40 CFR Part 60, nitrogen oxides and oxygen (or carbon dioxide) must be collected concurrently (or within a 30- to -60 minute period) by both the continuous emission monitors and the test methods specified as follows: For nitrogen oxides, EPA Reference Method 7, 7A, 7C, 7D, or 7E must be used; and, for oxygen (or carbon dioxide), EPA Reference Method 3, 3A, or 3B, or as an alternative ASME PTC-19-10-1981-Part 10 must be used.
 - 59.d.ii. The span value of the continuous emissions monitoring system must be 125 percent of the maximum estimated hourly potential nitrogen oxide emissions of the municipal waste combustor unit.

Carbon Monoxide Monitoring

60. To determine compliance with the carbon monoxide emission limit, the permittee must install, calibrate, maintain, and operate a continuous emission monitoring system for measuring carbon monoxide at the combustor outlet and record the output of the system in accordance with the following:
[OAR 340-230-0340(9)]

60.a. Compliance with the carbon monoxide emission limits must be determined using a 4-hour block arithmetic average. The 4-hour block daily arithmetic averages must be calculated from 1-hour arithmetic averages expressed in parts per million by volume corrected to 7 percent oxygen (dry basis). The 1-hour arithmetic averages must be calculated using the data points generated by the continuous emission monitoring system. At least two data points must be used to calculate each 1-hour arithmetic average.

60.b. The continuous emission monitoring system must be operated according to Performance Specification 4A in Appendix B of 40 CFR Part 60. The relative accuracy criterion of 5 parts per million dry volume is calculated as the absolute value of the mean difference between the reference method and continuous emission monitoring systems.

60.c. During each relative accuracy test run of the continuous emission monitoring system required by Performance Specification 4A in Appendix B of 40 CFR Part 60, carbon monoxide and oxygen (or carbon dioxide) data must be collected concurrently (or within a 30- to -60 minute period) by both the continuous emission monitors and the test methods specified as follows: For carbon monoxide, EPA Reference Methods 10, 10A, or 10B must be used; and, for oxygen (or carbon dioxide), EPA Reference Method 3, 3A, or 3B, or ASME PTC-19-10-1981-Part 10 must be used.

60.d. The span value of the continuous emission monitoring system must either be 125 percent of the maximum estimated hourly potential carbon monoxide emissions of the municipal waste combustor unit or that specified by Performance Specification 4A.

Load Level Monitoring

61. The procedures specified below must be used to determine compliance with load level requirements.
[OAR 340-230-0340(9)(e) and (g)]

61.a. For each municipal waste combustor unit, the permittee must install, calibrate, maintain, and operate a steam flow meter or a feedwater flow meter; measure steam (or feedwater) flow in kilograms per hour (or pounds per hour) on a continuous basis; and record the output of the monitor. Steam (or feedwater) flow must be calculated in 4-hour block arithmetic averages.

61.b. The method included in the "American Society of Mechanical Engineers Power Test Codes: Test Code for Steam Generating Units, Power Test Code 4.1 -- 1964 (R1991)" section 4 (incorporated by reference, see 40 CFR 60.17) must be used for calculating the steam (or feedwater) flow. The recommendations in "American Society of Mechanical Engineers Interim Supplement 19.5 on Instruments and Apparatus: Application, Part II of Fluid Meters, 6th edition (1971)," chapter 4 (incorporated by reference -- see 40 CFR 60.17) must be followed for design, construction, installation, calibration, and use of nozzles and orifices except as specified below:

61.b.i. Measurement devices such as flow nozzles and orifices are not required to be recalibrated after they are installed.

61.b.ii. All signal conversion elements associated with steam (or feedwater flow)

measurements must be calibrated according to the manufacturer's instructions before each dioxins/furans performance test, and at least once per year.

61.c. The maximum demonstrated municipal waste combustor unit load shall be the highest 4-hour arithmetic average load achieved during four consecutive hours during the most recent test during which compliance with the dioxins/furans emission limit was achieved. If a subsequent dioxin/furan performance test is being performed on only one unit at the MWC plant, the permittee may elect to apply the same maximum municipal waste combustor unit load from the tested facility for all the similarly designed and operated units at the MWC plant.

Baghouse Temperature Monitoring

62. The procedures specified below must be used to determine compliance with the maximum particulate matter control device temperature requirements. [OAR 340-230-0340(9)(f) and (h)]

62.a. The permittee must install, calibrate, maintain, and operate a device for measuring on a continuous basis the temperature of the flue gas stream at the inlet to each particulate matter control device utilized by each municipal waste combustor unit. Temperature must be calculated in 4-hour block arithmetic averages.

62.b. For each particulate matter control device employed at each municipal waste combustor unit, the maximum demonstrated particulate matter control device temperature must be determined during each performance test during which compliance with the dioxin/furan emission limit is achieved. The maximum demonstrated particulate matter control device temperature shall be the highest 4-hour arithmetic average temperature achieved at the particulate matter control device inlet during four consecutive hours during the most recent test during which compliance with the dioxins/furans limit was achieved. If a subsequent dioxin/furan performance is being performed on only one unit at the MWC plant, the permittee may elect to apply the same maximum particulate matter control device temperature from the tested facility for all the similarly designed and operated unit at the MWC plant.

62.c. The facility may use the exit temperature from the scrubber as a surrogate for monitoring the inlet temperature of the baghouse in the event of failure of the inlet baghouse temperature measurement device. [OAR 340-218-0050(3)(a)(C)]

Carbon Injection Monitoring

63. Where activated carbon injection is used to comply with the mercury emission limit, the permittee must follow the procedures specified below: [OAR 340-230-0340(7)(f) and (12)]

63.a. During any performance test for mercury, the permittee must measure or estimate an average carbon mass feed rate based on carbon injection system operating parameters such as the screw feeder speed, hopper volume, hopper refill frequency, or other parameters appropriate to the feed system being employed. The average carbon mass feed rate in kilograms per hour or pounds per hour must be measured or estimated during each performance test for mercury emissions.

63.b. During operation of the municipal waste combustor units, the carbon injection system operating parameter(s) that are the primary indicator(s) of the carbon mass feed rate (e.g., screw feeder setting) must be averaged over a block 8-hour period, and the 8-hour average must equal or exceed the level(s) documented during the performance tests specified under Condition 63.a, taking into consideration the provisions of Condition 38, based upon a 8-hour block average. The permittee may use the "Y" feed system for carbon injection when either of the carbon feed systems is off-line.

63.c. The permittee must estimate the total carbon usage of the plant (kilograms or pounds) for each calendar quarter by two independent methods, according to the procedures specified below:

63.c.i. The weight of carbon delivered to the plant.

63.c.ii. Estimate the average carbon mass feed rate in kilograms per hour or pounds per hour for each hour of operation for each municipal waste combustor unit based on the parameters specified in Condition 63.a, and sum the results for all municipal waste combustor units at the plant for the total number of hours of operation during the calendar quarter.

63.d. Pneumatic injection pressure or other carbon injection system operational indicator must be used to provide additional verification of proper carbon injection system operation. The operational indicator must provide an instantaneous visual and/or audible alarm to alert the operator of a potential interruption in the carbon feed that would not normally be indicated by direct monitoring of carbon mass feed rate (e.g., continuous weight loss feeder) or monitoring of the carbon system operating parameter(s) that are the indicator(s) of carbon mass feed rate (e.g., screw feeder speed). The carbon injection system operational indicator used to provide additional verification of carbon injection system operation, including basis for selecting the indicator and operator response to the indicator alarm, must be included in the site-specific operating manual required by Condition 12.

Conflicting Requirements

64. Continuous monitoring for opacity, sulfur dioxide, nitrogen oxides, carbon monoxide, and diluent gases (oxygen or carbon dioxide) must be conducted in accordance with DEQ's Continuous Monitoring Manual and the specific requirements of this permit. If at any time there is a conflict between DEQ's Continuous Monitoring Manual and the federal requirements contained in 40 CFR 60.13, Appendix B and Appendix F, the federal requirements must govern. [OAR 340-230-0340(17)]

Scrubber and Baghouse Monitoring

65. The permittee must maintain records of the number of replacement bags on site and control device operating parameters. This condition is enforceable only by the [State][JT7]. [OAR 340-218-0050(3)(a)(C)]

RECORDKEEPING REQUIREMENTS

General Recordkeeping Requirements

66. The permittee must maintain the following general records of testing and monitoring required by this permit: [OAR 340-218-0050(3)(b)(A)]

66.a. The date, place as defined in the permit, and time of sampling or measurements.

66.b. The date(s) analyses were performed.

66.c. The company or entity that performed the analyses.

66.d. The analytical techniques or methods used.

66.e. The results of such analyses.

66.f. The operating conditions as existing at the time of sampling or measurement.

66.g. The records of quality assurance for continuous monitoring systems (including but not

limited to quality control activities, audits, calibration drift checks).

67. Unless otherwise specified by permit condition, the permittee must make every effort to maintain 100 percent of the records required by the permit. If information is not obtained or recorded for legitimate reasons (e.g., the monitor or data acquisition system malfunctions or is undergoing maintenance), the missing record(s) will not be considered a permit deviation provided the amount of data lost does not exceed 10% of the averaging periods in a reporting period or 10% of the total operating hours in a reporting period, if no averaging time is specified. Upon discovering that a required record is missing, the permittee must document the reason for the missing record. In addition, any missing record that can be recovered from other available information will not be considered a missing record. [OAR 340-214-0110 and 340-218-0050(3)(b)]
68. Recordkeeping requirements must commence on the date of permit issuance unless otherwise specified in the permit or an applicable requirement. [OAR 340-218-0050(3)(b)(C)]
69. Unless otherwise specified, the permittee must retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings (or other original data) for continuous monitoring instrumentation, and copies of all reports required by the permit. [OAR 340-218-0050(3)(b)(B)]

Specific Recordkeeping Requirements

70. [The permittee must maintain the following specific records of required monitoring:^[JT8] [OAR 340-218-0050(3)(a)(C)]]
 - 70.a. Total amount (tons) of municipal solid waste burned in each municipal waste combustor unit for each day, month, and 12 consecutive month period.
 - 70.b. Total amount (tons) of medical waste burned at the facility for each day, month, and 12 consecutive month period.
 - 70.c. Total amount (pounds) of steam produced by each municipal waste combustor unit for each month and 12 consecutive month period.
 - 70.d. Total amount (MM ft³) of natural gas burned at the facility for each month and 12 consecutive month period.
 - 70.e. Total hours of operation of each municipal waste combustor unit for each month and 12 consecutive month period.
 - 70.f. Facility inspection and maintenance records.
 - 70.g. Complaint records in accordance with Condition 55.
 - 70.h. Pollutant emissions for each month and each 12-consecutive month period.
 - 70.i. Total amount of electricity produced by the facility for each month.
 - 70.j. Excess emissions in accordance with Condition 73.
71. All records specified under Condition 72 must be maintained onsite in either paper copy or computer-readable format, unless an alternative format is approved by DEQ. [OAR 340-230-0350(6)]
72. The permittee must maintain records of the information specified below, as applicable, for each municipal

waste combustor unit for a period of at least 5 years. The information must be available for submittal to DEQ or for review onsite by an inspector. [OAR 340-230-0350(1)]

- 72.a. The calendar date of each record; [OAR 340-230-0350(1)(a)]
- 72.b. The following emission concentrations and parameters measured using continuous monitoring systems: [OAR 340-230-0350(1)(b)]
 - 72.b.i. All 6-minute average opacity levels.
 - 72.b.ii. All 1-hour average sulfur dioxide emission concentrations.
 - 72.b.iii. All 1-hour average nitrogen oxides emission concentrations.
 - 72.b.iv. All 1-hour average carbon monoxide emission concentrations, municipal waste combustor unit load measurements, and particulate matter control device inlet temperatures.
 - 72.b.v. All 24-hour daily geometric average sulfur dioxide emission concentrations and all 24-hour daily geometric average percent reductions in sulfur dioxide emissions.
 - 72.b.vi. All 24-hour daily arithmetic average nitrogen oxides emission concentrations
 - 72.b.vii. All 4-hour block arithmetic average carbon monoxide emission concentrations.
 - 72.b.viii. All 4-hour block arithmetic average municipal waste combustor unit load levels and particulate matter control device inlet temperatures.
- 72.c. Identification of the calendar dates when any of the average emission concentrations, percent reductions, or operating parameters, or the opacity levels were above the applicable limits, with reasons for such exceedances and a description of corrective actions taken. [OAR 340-230-0350(1)(c)]
- 72.d. For the carbon injection system the records specified below: [OAR 340-230-0350(1)(d) and (l)]
 - 72.d.i. The average carbon mass feed rate (in kilograms per hour or pounds per hour) estimated during each mercury emissions performance test, with supporting calculations.
 - 72.d.ii. The average carbon mass feed rate (in kilograms per hour or pounds per hour) estimated for each hour of operation, with supporting calculations.
 - 72.d.iii. The total carbon usage for each calendar quarter estimated, with supporting calculations.
 - 72.d.iv. Carbon injection system operating parameter data for the parameter(s) that are the primary indicator(s) of carbon feed rate (e.g., screw feeder speed).
 - 72.d.v. Identification of the calendar dates when the average carbon mass feed rates were less than either of the hourly carbon feed rates estimated during performance tests for mercury or dioxin/furan emissions with reasons for such feed rates and a description of corrective actions taken.

72.d.vi. Identification of the calendar dates when the carbon injection system operating parameter(s) that are the primary indicator(s) of carbon mass feed rate (e.g., screw feeder speed) are below the level(s) estimated during the performance tests, with reasons for such occurrences and a description of corrective actions taken.

72.e. Identification of the calendar dates and times (hours) for which valid hourly data specified below have not been obtained including reasons for not obtaining the data and a description of corrective actions taken: [OAR 340-230-0350(1)(e)]

- 72.e.i. Sulfur dioxide emissions data;
- 72.e.ii. Nitrogen oxides emissions data;
- 72.e.iii. Carbon monoxide emissions data;
- 72.e.iv. Municipal waste combustor unit load data;
- 72.e.v. Particulate matter control device temperature data; and
- 72.e.vi. Carbon usage and carbon injection system operating parameter data.

72.f. Identification of each occurrence that sulfur dioxide emissions data, nitrogen oxides emissions data, carbon monoxide emissions data or operational data (i.e., unit load and particulate matter control device temperature) have been excluded from the calculation of average emission concentrations or parameters, and the reasons for excluding the data. [OAR 340-230-0350(1)(f)]

72.g. The results of daily drift tests and quarterly accuracy determinations for sulfur dioxide, nitrogen oxides, and carbon monoxide continuous emissions monitoring systems, as required by 40 CFR Part 60, Appendix F, Procedure 1. [OAR 340-230-0350(1)(g)]

72.h. The test reports documenting the results of all annual performance tests conducted to determine compliance with the particulate matter, opacity, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash emission limits, including the oxygen/carbon dioxide relationship (if applicable according to Condition 56.e) must be recorded along with supporting calculations. The test reports must also include the following information: [OAR 340-230-0350(1)(h)]

- 72.h.i. The maximum demonstrated municipal waste combustor unit load measure during the dioxin/furan performance test; and
- 72.h.ii. The maximum demonstrated particulate matter control device temperature (for each particulate matter control device) measured during the dioxin/furan performance test.
- 72.h.iii. The average carbon injection rate measured during the mercury performance test.

72.i. Training records as specified below: [OAR 340-230-0350(1)(j) and (k)]

- 72.i.i. Records showing the names of the municipal waste combustor chief facility operator, shift supervisors, and control room operators who have been provisionally certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program, including the dates of initial and renewal certifications and documentation of current certification.

72.i.ii. Records showing the names of the municipal waste combustor chief facility operator, shift supervisors, and control room operators who have been fully certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program, including the dates of initial and renewal certifications and documentation of current certification.

72.i.iii. Records showing the names of the municipal waste combustor chief facility operator, shift supervisors, and control room operators who have completed the EPA municipal waste combustor operator training course or a State-approved equivalent course, including documentation of training completion.

72.i.iv. Records of when a certified operator is temporarily off site including:

70.i.iv.(1) If the certified chief facility operator and certified shift supervisor are off site for more than 12 hours, but for 2 weeks or less, and no other certified operator is on site, record the dates that the certified chief facility operator and certified shift supervisor were off site.

71.i.iv.(2) When all certified chief facility operators and certified shift supervisors are off site for more than two weeks and no other certified operator is on site, keep the following records:

71.i.iv.(2)(i) Time of day that all certified persons are off site;

71.i.iv.(2)(ii) The conditions that caused those people to be off site;

71.i.iv.(2)(iii) The corrective actions taken by the permittee to ensure a certified chief facility operator or certified shift supervisor is on site as soon as practicable; and

71.i.iv.(2)(iv) Copies of the written reports submitted every 4 weeks that summarize the actions taken by the permittee to ensure that a certified chief facility operator or certified shift supervisor will be on site as soon as practicable.

72.i.v. Records showing the names of persons who have completed a review of the site specific operating manual, including the date of the initial review and subsequent annual reviews.

REPORTING REQUIREMENTS

General Reporting Requirements

73. Excess Emissions Reporting: The permittee must report all excess emissions as follows: [OAR 340-214-0300 through 340-214-0360]

73.a. Immediately (within 1 hour of the event) notify DEQ of an excess emission event by phone, e-mail, or facsimile; and

73.b. Within 15 days of the excess emissions event, submit a written report that contains the following information: [OAR 340-214-0340(1)]

73.b.i. The date and time of the beginning of the excess emissions event and the duration or best estimate of the time until return to normal operation;

73.b.ii. The date and time the owner or operator notified DEQ of the event;

73.b.iii. The equipment involved;

73.b.iv. Whether the event occurred during planned startup, planned shutdown, scheduled maintenance, or as a result of a breakdown, malfunction, or emergency;

- 73.b.v. Steps taken to mitigate emissions and corrective action taken, including whether the approved procedures for a planned startup, shutdown, or maintenance activity were followed;
- 73.b.vi. The magnitude and duration of each occurrence of excess emissions during the course of an event and the increase over normal rates or concentrations as determined by continuous monitoring or best estimate (supported by operating data and calculations);
- 73.b.vii. The final resolution of the cause of the excess emissions; and
- 73.b.viii. Where applicable, evidence supporting any claim that emissions in excess of technology-based limits were due to any emergency pursuant to OAR 340-214-0360.

73.c. In the event of any excess emissions which are of a nature that could endanger public health and occur during non-business hours, weekends, or holidays, the permittee must immediately notify DEQ by calling the Oregon Emergency Response System (OERS). The current number is 1-800-452-0311.

73.d. If startups, shutdowns, or scheduled maintenance may result in excess emissions, the permittee must submit startup, shutdown, or scheduled maintenance procedures used to minimize excess emissions to DEQ for prior authorization, as required in OAR 340-214-0310 and 340-214-0320. New or modified procedures must be received by DEQ in writing at least 72 hours prior to the first occurrence of the excess emission event. The permittee must abide by the approved procedures and have a copy available at all times.

73.e. The permittee must continue to maintain a log of all excess emissions in accordance with OAR 340-214-0340(3). However, the permittee is not required to submit the detailed log with the semi-annual and annual monitoring reports. The permittee is only required to submit a brief summary listing the date, time, and the affected emissions units for each excess emission that occurred during the reporting period. [OAR 340-218-0050(3)(c)]

73.f. Notwithstanding the immediate reporting requirement specified above, the permittee must make an initial notification of an excess emissions event no later than one hour after the start of first working day (i.e. 8 AM of the following day) following the excess emissions event.

74. **Permit Deviations Reporting:** The permittee must promptly report deviations from permit requirements that do not cause excess emissions, including those attributable to upset conditions, as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. "Prompt" means within 15 days of the deviation. Deviations that cause excess emissions, as specified in OAR 340-214-0300 through 340-214-0360 must be reported in accordance with Condition 73.

75. All required reports must be certified by a responsible official consistent with OAR 340-218-0040(5);[OAR 340-218-0050(3)(c)(D)]

76. Reporting requirements must commence on the date of permit issuance unless otherwise specified in the permit. [OAR 340-218-0050(3)(c)(E)]

Addresses of regulatory agencies are the following, unless otherwise instructed:

DEQ – Western Region
4026 Fairview Industrial Drive SE
Salem, OR 97302
(503) 378-8240

DEQ – Air Quality Division
700 NE Multnomah St., Suite 600
Portland, OR 97232
(503) 229-5359

Air Operating Permits
US Environmental Protection Agency
Mail Stop OAQ-108
1200 Sixth Avenue
Seattle, WA 98101

Specific Reporting Requirements

77. The permittee must submit three (3) copies of reports of any required monitoring at least every 6 months, completed on forms approved by DEQ. The six month periods are January 1 to June 30 and July 1 to December 31. Two copies of the report must be submitted to the DEQ regional office, and one copy to the EPA Region X office. All instances of deviations from permit requirements must be clearly identified in such reports. [OAR 340-218-0050(3)(c)(A), 340-218-0080(6)(d), 340-230-0350(3), (4), and (7)]
78. The first semi-annual report is due by **August 30** and must include the following:

Semi-annual Compliance Certification Report

- 78.a. The semi-annual compliance certification report which must include the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable). [OAR 340-218-0080(6)(c) & (e)]
 - 78.a.i. The identification of each term or condition of the permit that is the basis of the certification.
 - 78.a.ii. The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period, and whether such methods or other means provide continuous or intermittent data. Such methods and other means must include, at a minimum, the methods and means required under OAR 340-218-0050(3). *Note: Certification of compliance with the monitoring conditions in the permit is sufficient to meet this requirement, except when the permittee must certify compliance with new applicable requirements that are incorporated by reference in the permit. When certifying compliance with new applicable requirements that are not yet in the permit, the permittee must provide the information required by this condition.* If necessary, the owner or operator also must identify any other material information that must be included in the certification to comply with section 113(c)(2) of the FCAA, which prohibits knowingly making a false certification or omitting material information.
 - 78.a.iii. The status of compliance with terms and conditions of the permit for the period covered by the certification, based on the method or means designated in Condition **Error! Reference source not found.**. The certification must identify each deviation and take it into account in the compliance certification. The certification must also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion or exceedance, as defined under OAR 340-200-0020, occurred.
 - 78.a.iv. Such other facts as DEQ may require to determine the compliance status of the source.
 - 78.a.v. Notwithstanding any other provision contained in any applicable requirement, the owner or operator may use monitoring as required under OAR 340-218-0050(3) and incorporated into the permit, in addition to any specified compliance methods, for the purpose of submitting compliance certifications.

Semi-Annual Monitoring Report

- 78.b. The semi-annual monitoring report must include the following information: [OAR 340-230-0350(3) & (4)]
 - 78.b.i. A summary of data collected for all pollutants and parameters regulated under this permit, which includes the following information:

78.b.i.A. A list of the particulate matter, opacity (as measured during the PM test), cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash emission levels achieved during any performance tests conducted during the reporting period.

78.b.i.B. A list of the highest emission level recorded for opacity, sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load level, and particulate matter control device inlet temperature based on the data recorded during the reporting period.

78.b.i.C. The total number of hours per calendar quarter and hours per calendar year that valid data for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load, or particulate matter control device temperature data were not obtained based on the data recorded during the reporting period.

78.b.i.D. The total number of hours that data for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load, and particulate matter control device temperature were excluded from the calculation of average emission concentrations or parameters based on the data recorded during the reporting period.

78.b.ii. The summary of data reported in Condition 78.b.i. must also provide the types of data specified in Condition 78.b.i. for the calendar year preceding the year being reported, in order to provide DEQ with a summary of the performance of the affected facility over a 2-year period.

78.b.iii. The summary of data including the information specified in Conditions 78.b.i. and 78.b.ii must highlight any emission or parameter levels that did not achieve the emission or parameter limits specified in this permit.

78.b.iv. A notification of intent to begin the reduced dioxins/furans performance testing schedule specified in Condition 43.b during the following calendar year and notification of intent to apply the average carbon mass fed rate and associated carbon injection system operating parameter levels as allowed by Condition 63 to similarly designed and equipped units on site.

78.b.v. Documentation periods when all certified chief facility operators and certified shift supervisors are off site for more than 12 hours.

78.b.vi. The semiannual report must include the following information for any recorded pollutant or parameter that does not comply with the pollutant or parameter limit:

78.b.vi.A. The semiannual report must include information recorded under Condition 72.c for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load level, particulate matter control device inlet temperature, and opacity.

78.b.vi.B. For each date recorded and reported, the semiannual report must include the sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load level, particulate matter control device inlet temperature, or opacity data, as applicable and

as recorded by Condition 72.b.i and Conditions 72.b.vi through 72.b. ix.

78.b.vi.C. If the test reports recorded under Condition 72.h document any particulate matter, opacity, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash emission levels that were above the applicable pollutant limits, the semiannual report must include a copy of the test report documenting the emission levels and the corrective actions taken.

78.b.vi.D. The semiannual report must include the information recorded under Condition 63.c. for the carbon injection system operating parameter(s) that are the primary indicator(s) of carbon mass feed rate.

78.b.vi.E. For each operating date reported under Condition 78.b.vi.D, the report must include the carbon feed rate data recorded in accordance with Condition 72.d.

Continuous Monitoring System Report

78.b.vii. The semi-annual monitoring report must include the CMS performance report in accordance with 40 CFR 60.7(7)(c).

79. Notwithstanding any other provision contained in any applicable requirement, the permittee may use monitoring as required under OAR 340-218-0050(3) and incorporated into the permit, in addition to any specified compliance methods, for the purpose of submitting compliance certifications. [OAR 340-218-0080(6)(e)]

Annual Report

80. The annual report is due by **March 15** must include the following: [OAR 340-218-0050(3)(c)(A)]

80.a. Specific operational data for the prior calendar year as follows.

80.a.i. Amount of municipal waste (not including medical waste) burned in each municipal waste combustor unit and facility total (tons).

80.a.ii. Total amount of medical waste burned at the facility (tons).

80.a.iii. Total amount of waste (tons) burned in each municipal waste combustor unit and facility total and facility total of natural gas (MM ft³) burned.

80.a.iv. Amount steam produced by each municipal waste combustor unit and facility total (pounds).

80.a.v. Total amount of electricity produced by the facility (MW-hours).

80.a.vi. Hours of operation of each municipal waste combustor unit.

80.b. The emission fee report. [OAR 340-220-0100]

80.c. A summary of the excess emissions upset log. [OAR 340-214-0340(4)(a)]

80.d. The second semi-annual compliance certification in accordance with the requirements of Condition78.a. [OAR 340-218-0080]

80.e. The second semi-annual monitoring report in accordance with the requirements of Condition78.b.

81. All reports specified by Conditions 77 through 79 must be submitted as a paper copy, postmarked on or before the submittal dates specified, and maintained onsite as a paper copy for a period of 5 years. [OAR 340-230-0350(5)]

Construction Notice Report

82. The permittee must maintain records of and submit the following information with any Notice of Construction required by OAR 340-210-0205 through 340-210-0250 or Notice of Approval required by OAR 340-218-0190: [OAR 340-230-0350(12)]

82.a. Intent to construct;

82.b. Planned initial startup date;

82.c. The types of fuels that the permittee plans to combust in the municipal waste combustor; and

82.d. The municipal waste combustor unit capacity and supporting capacity calculations prepared in accordance with OAR 340-230-0340(10).

Greenhouse Gas Reporting

83. If the calendar year emission rate of greenhouse gases (CO₂e) is greater than or equal to 2,756 tons (2,500 metric tons), the permittee must register and report its greenhouse gas emissions with DEQ in accordance with OAR 340-215. The greenhouse gas report must be certified by the responsible official consistent with OAR 340-218-0040(5).

EMISSION FEES

84. Emission fees will be based on the Plant Site Emission Limits in Condition 33, unless the permittee elects to report actual emissions for one or more permitted processes/pollutants. [OAR 340-220-0090]

NON-APPLICABLE REQUIREMENTS

State and Federal air quality requirements (e.g., rules and regulations) currently determined not applicable to the permittee are listed below along with the reason for the non-applicability: [OAR 340-218-0110(b)]

<u>Rule</u>	<u>Reason Code</u>	<u>Rule</u>	<u>Reason Code</u>	<u>Rule</u>	<u>Reason Code</u>	<u>Rule</u>	<u>Reason Code</u>
OAR Chapter 340:		Division 214:		Division 222:		0100 through 0130	f
Division 202:	b	0130(2) and (3)	h	0042	h	0200	e
Division 206:		0210 and 0220	b	0060	h	0300	b
0050	c	Division 218:		0090	h	Division 230:	
Division 208:		0050(4)	b	Division 226:		0100 through 0150	e
0510 through 0640	d	0050(8)	h	0300 through 0320	b	0200 through 0230	e
Division 210:		0090	b	0400	h	0365 through 0395	e
0100 through 0120	b	0100	b	Division 228:		0400 through 0410	e

<u>Rule</u>	<u>Reason Code</u>	<u>Rule</u>	<u>Reason Code</u>	<u>Rule</u>	<u>Reason Code</u>	<u>Rule</u>	<u>Reason Code</u>
Division 232:	b or c	Division 250:	i	0190	e	appendices	
Division 234:	b	Division 252:	i	Division 266:	b	Part 63, except subpart A, ZZZZ, and appendices	b
Division 236:	b	Division 254	e				
Division 238:		Division 256:	b or c	40 CFR		Part 68	b
0100	e	Division 258:	b	Part 55	b	Parts 72 through 78	b
Division 240:	c	Division 260:	b	Part 57	b	Part 82, except subpart F	b
Division 242:	c	Division 262:	b	Part 60, except subparts A, Cb, and appendices			
Division 244:		Division 264:				Parts 85 through 89	b
0110 through 0180	h	0100	d	Part 61, except subparts A, M, and	b		
0230	b	0120 through 0170	d				

Reason code definitions:

- a this pollutant is not emitted by the facility
- b the facility is not in this source category
- c the facility is not in a special control/nonattainment area
- d the facility is not in this county
- e the facility does not have this emissions unit
- f the facility does not use this fuel type
- g the rule does not apply because no changes have been made at the facility that would trigger these procedural requirements
- h this method/procedure is not used by the facility
- i this rule applies only to DEQ and regional authorities
- j these rules applied in the past and the fees have been paid
- k other

General Conditions

G1. General Provision

Terms not otherwise defined in this permit have the meaning assigned to such terms in the referenced regulation.

G2. Reference materials

Where referenced in this permit, the versions of the following materials are effective as of the dates noted unless otherwise specified in this permit:

- a. Source Sampling Manual; November, 15, 2018;
- b. Continuous Monitoring Manual; April 16, 2015 - State Implementation Plan Volume 3, Appendix A6; and
- c. All state and federal regulations as in effect on the date of issuance of this permit.

G3. Applicable Requirements [OAR 340-218-0010(3)(b)]

Oregon Title V Operating Permits do not replace requirements in Air Contaminant Discharge Permits (ACDP) issued to the source even if the ACDP(s) have expired. For a source operating under a Title V permit, requirements established in an earlier ACDP remain in effect notwithstanding expiration of the ACDP or Title V permit, unless a provision expires by its terms or unless a provision is modified or terminated following the procedures used to establish the requirement initially. Source specific requirements, including, but not limited to TACT, RACT, BACT, and LAER requirements, established in

an ACDP must be incorporated into the Oregon Title V Operating Permit and any revisions to those requirements must follow the procedures used to establish the requirement initially.

G4. Compliance [OAR 340-218-0040(3)(n)(C), 340-218-0050(6), and 340-218-0080(4)]

- a. The permittee must comply with all conditions of this permit. Any permit condition noncompliance constitutes a violation of the Federal Clean Air Act and/or state rules and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application. Any noncompliance with a permit condition specifically designated as enforceable only by the state constitutes a violation of state rules only and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application.
- b. Any schedule of compliance for applicable requirements with which the source is not in compliance at the time of permit issuance is supplemental to, and does not sanction noncompliance with the applicable requirements on which it is based.
- c. For applicable requirements that will become effective during the permit term, the source must meet such requirements on a timely basis unless a more detailed schedule is expressly required by the applicable requirement.

G5. Masking Emissions:

The permittee must not install or use any device or other means designed to mask the emission of an air contaminant that causes or is likely to cause detriment to health, safety, or welfare of any person or otherwise violate any other regulation or requirement. [OAR 340-208-0400] This condition is enforceable only by the State.

G6. Credible Evidence:

Notwithstanding any other provisions contained in any applicable requirement, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any such applicable requirements. [OAR 340-214-0120]

G7. Certification [OAR 340-214-0110, 340-218-0040(5), 340-218-0050(3)(c)(D), and 340-218-0080(2)]

Any document submitted to DEQ or EPA pursuant to this permit must contain certification by a responsible official of truth, accuracy and completeness. All certifications must state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and, complete. The permittee must promptly, upon discovery, report to DEQ a material error or omission in these records, reports, plans, or other documents.

G8. Open Burning [OAR Chapter 340, Division 264]

The permittee is prohibited from conducting open burning, except as may be allowed by OAR 340-264-0020 through 340-264-0200.

G9. Asbestos [40 CFR Part 61, Subpart M (federally enforceable), OAR Chapter 340-248-0005 through 340-248-0180 (state-only enforceable) and 340-248-0205 through 340-248-0280]

The permittee must comply with OAR Chapter 340, Division 248, and 40 CFR Part 61, Subpart M when conducting any renovation or demolition activities at the facility.

G10. Stratospheric Ozone and Climate Protection [40 CFR 82 Subpart F, OAR 340-260-0040]

The permittee must comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, Recycling and Emissions Reduction.

G11. Permit Shield [OAR 340-218-0110]

- a. Compliance with the conditions of the permit is deemed compliance with any applicable requirements as of the date of permit issuance provided that:
 - i. such applicable requirements are included and are specifically identified in the permit, or
 - ii. DEQ, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary thereof.
- b. Nothing in this rule or in any federal operating permit alters or affects the following:
 - i. the provisions of ORS 468.115 (enforcement in cases of emergency) and ORS 468.035 (function of department);
 - ii. the liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
 - iii. the applicable requirements of the national acid rain program, consistent with section 408(a) of the FCAA; or
 - iv. the ability of DEQ to obtain information from a source pursuant to ORS 468.095 (investigatory authority, entry on premises, status of records).
- c. Sources are not shielded from applicable requirements that are enacted during the permit term, unless such applicable requirements are incorporated into the permit by administrative amendment, as provided in OAR 340-218-0150(1)(h), significant permit modification, or reopening for cause by DEQ.

G12. Inspection and Entry [OAR 340-218-0080(3)]

Upon presentation of credentials and other documents as may be required by law, the permittee must allow DEQ, or an authorized representative (including an authorized contractor acting as a representative of the EPA Administrator), to perform the following:

- a. enter upon the permittee's premises where an Oregon Title V Operating Permit program source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
- b. have access to and copy, at reasonable times, any records that must be kept under conditions of the permit;
- c. inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
- d. as authorized by the FCAA or state rules, sample or monitor, at reasonable times, substances or parameters, for the purposes of assuring compliance with the permit or applicable requirements.

G13. Fee Payment [OAR 340-220-0010, and 340-220-0030 through 340-220-0190]

The permittee must pay an annual base fee and an annual emission fee for particulates, sulfur dioxide, nitrogen oxides, and volatile organic compounds. The permittee must submit payment to the Department of Environmental Quality, Financial Services, 700 Multnomah St., Suite 600, Portland, OR 97232, within 30 days of the date DEQ mails the fee invoice or August 1 of the year following the calendar year for which emission fees are paid, whichever is later. Disputes must be submitted in writing to DEQ. Payment

must be made regardless of the dispute. User-based fees will be charged for specific activities (e.g., computer modeling review, ambient monitoring review, etc.) requested by the permittee.

G14. Off-Permit Changes to the Source [OAR 340-218-0140(2)]

- a. The permittee must monitor for, and record, any off-permit change to the source that:
 - i. is not addressed or prohibited by the permit;
 - ii. is not a Title I modification;
 - iii. is not subject to any requirements under Title IV of the FCAA;
 - iv. meets all applicable requirements;
 - v. does not violate any existing permit term or condition; and
 - vi. may result in emissions of regulated air pollutants subject to an applicable requirement but not otherwise regulated under this permit or may result in insignificant changes as defined in OAR 340-200-0020.
- b. A contemporaneous notification, if required under OAR 340-218-0140(2)(b), must be submitted to DEQ and the EPA.
- c. The permittee must keep a record describing off-permit changes made at the facility that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those off-permit changes.
- d. The permit shield of condition G11 does not extend to off-permit changes.

G15. Section 502(b)(10) Changes to the Source [OAR 340-218-0140(3)]

- a. The permittee must monitor for, and record, any section 502(b)(10) change to the source, which is defined as a change that would contravene an express permit term but would not:
 - i. violate an applicable requirement;
 - ii. contravene a federally enforceable permit term or condition that is a monitoring, recordkeeping, reporting, or compliance certification requirement; or
 - iii. be a Title I modification.
- b. A minimum 7-day advance notification must be submitted to DEQ and the EPA in accordance with OAR 340-218-0140(3)(b).
- c. The permit shield of condition G11 does not extend to section 502(b)(10) changes.

G16. Administrative Amendment [OAR 340-218-0150]

Administrative amendments to this permit must be requested and granted in accordance with OAR 340-218-0150. The permittee must promptly submit an application for the following types of administrative amendments upon becoming aware of the need for one, but no later than 60 days of such event:

- a. legal change of the registered name of the company with the Corporations Division of the State of Oregon, or
- b. sale or exchange of the activity or facility.

G17. Minor Permit Modification [OAR 340-218-0170]

The permittee must submit an application for a minor permit modification in accordance with OAR 340-218-0170.

G18. Significant Permit Modification [OAR 340-218-0180]

The permittee must submit an application for a significant permit modification in accordance with OAR 340-218-0180

G19. Staying Permit Conditions [OAR 340-218-0050(6)(c)]

Notwithstanding conditions G16 and G17, the filing of a request by the permittee for a permit modification, revocation and re-issuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

G20. Construction/Operation Modification [OAR 340-218-0190]

The permittee must obtain approval from DEQ prior to construction or modification of any stationary source or air pollution control equipment in accordance with OAR 340-210-0200 through OAR 340-210-0250.

G21. New Source Review Modification [OAR 340-224-0010]

The permittee may not begin construction of a major source or a major modification of any stationary source without having received an air contaminant discharge permit (ACDP) from DEQ and having satisfied the requirements of OAR 340, Division 224.

G22. Need to Halt or Reduce Activity Not a Defense [OAR 340-218-0050(6)(b)]

The need to halt or reduce activity will not be a defense. It will not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

G23. Duty to Provide Information [OAR 340-218-0050(6)(e) and OAR 340-214-0110]

The permittee must furnish to DEQ, within a reasonable time, any information that DEQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the permittee must also furnish to DEQ copies of records required to be retained by the permit or, for information claimed to be confidential, the permittee may furnish such records to DEQ along with a claim of confidentiality.

G24. Reopening for Cause [OAR 340-218-0050(6)(c) and 340-218-0200]

- a. The permit may be modified, revoked, reopened and reissued, or terminated for cause as determined by DEQ.
- b. A permit must be reopened and revised under any of the circumstances listed in OAR 340-218-0200(1)(a).
- c. Proceedings to reopen and reissue a permit must follow the same procedures as apply to initial permit issuance and affect only those parts of the permit for which cause to reopen exists.

G25. Severability Clause [OAR 340-218-0050(5)]

Upon any administrative or judicial challenge, all the emission limits, specific and general conditions, monitoring, recordkeeping, and reporting requirements of this permit, except those being challenged, remain valid and must be complied with.

G26. Permit Renewal and Expiration [OAR 340-218-0040(1)(a)(D) and 340-218-0130]

- a. This permit expires at the end of its term, unless a timely and complete renewal application is submitted as described below. Permit expiration terminates the permittee's right to operate.
- b. Applications for renewal must be submitted at least 12 months before the expiration of this permit, unless DEQ requests an earlier submittal. If more than 12 months is required to process a permit renewal application, DEQ must provide no less than six (6) months for the owner or operator to prepare an application.
- c. Provided the permittee submits a timely and complete renewal application, this permit will remain in effect until final action has been taken on the renewal application to issue or deny the permit.

G27. Permit Transference [OAR 340-218-0150(1)(d)]

The permit is not transferable to any person except as provided in OAR 340-218-0150(1)(d).

G28. Property Rights [OAR 340-200-0020 and 340-218-0050(6)(d)]

The permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations, except as provided in OAR 340-218-0110.

G29. Permit Availability [OAR 340-200-0020 and 340-218-0120(2)]

The permittee must have available at the facility at all times a copy of the Oregon Title V Operating Permit and must provide a copy of the permit to DEQ or an authorized representative upon request.

ALL INQUIRIES SHOULD BE DIRECTED TO:

DEQ Western Region
4026 Fairview Industrial Drive SE
Salem, OR 97302
503-378-8240



State of Oregon
Department of
Environmental
Quality

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
OREGON TITLE V OPERATING PERMIT
REVIEW REPORT for
Covanta Marion, Inc.

Western Region
 4026 Fairview Industrial Drive SE
 Salem, OR 97302
 Telephone (503) 378-8240

Source Information:

SIC	4953	NAICS	562213
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Compliance and Emissions Monitoring Requirements:

Unassigned emissions	X
Emission credits	NA
Compliance schedule	NA
Source test [date(s)]	Annually

COMS	X
CEMS	CO, SO ₂ , NO _x
Ambient monitoring	NA

Reporting Requirements

Annual report (due date)	March 15
Emission fee report (due date)	March 15
SACC (due date)	August 30
Quarterly report (due dates)	NA
GHG report	X

Monthly report (due dates)	NA
Excess emissions report	X
Other reports	NA

Air Programs

NSPS (list subparts)	Cb
NESHAP (list subparts)	ZZZZ
CAM	X
Regional Haze (RH)	NA
Synthetic Minor (SM)	NA
Part 68 Risk Management	NA
CFC	NA
TACT	NA

Title V	X
Major HAP source	X
Federal major source (listed source)	X
NSR	NA
PSD (1983, 1988)	X
GHG	X

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LIST OF ABBREVIATIONS USED IN THIS REVIEW REPORT

ACDP	Air Contaminant Discharge Permit	MMft ³	one million cubic feet
Act	Federal Clean Air Act	NA	Not applicable
ASTM	American Society of Testing and Materials	NO _x NSPS	Nitrogen oxides New Source Performance Standards
BACT	Best Available Control Technology	NSR	New Source Review
BDT	Bone Dry Tons	O ₂	Oxygen
BDU	Bone Dry Units	OAR	Oregon Administrative Rules
Btu	British thermal unit	ODEQ	Oregon Department of Environmental Quality
CAM	Compliance Assurance Monitoring	ORS	Oregon Revised Statutes
CEMS	Continuous Emissions Monitoring System	O&M	Operation and maintenance
CFR	Code of Federal Regulations	Pb	Lead
CMS	Continuous Monitoring System	PCD	Pollution Control Device
CO ₂ e	Carbon dioxide equivalent	PM	Particulate matter
CO	Carbon Monoxide	PM _{2.5}	Particulate matter less than 2.5 microns in size
COMS	Continuous Opacity Monitoring System	PM ₁₀	Particulate matter less than 10 microns in size
CPMS	Continuous parameter monitoring system	ppm	Parts per million
DEA	Drug Enforcement Administration	PSD	Prevention of Significant Deterioration
DEQ	Department of Environmental Quality	PSEL	Plant Site Emission Limit
dscf	Dry standard cubic feet	scf	standard cubic foot
dscfm	Dry standard cubic feet per minute	scfm	standard cubic foot per minute
EF	Emission factor	SERP	Source Emissions Reduction Plan
EPA	US Environmental Protection Agency	SIC	Standard Industrial Code
ESP	Electrostatic precipitator	SO ₂	Sulfur dioxide
EU	Emissions Unit	SSM plan	Startup, Shutdown, and Malfunction Plan
FCAA	Federal Clean Air Act	ST	Source test
FSA	Fuel sampling and analysis	SW	Solid Waste
ft ³	cubic feet	TRS	Total Reduced Sulfur
GHG	Greenhouse Gases	VE	Visible emissions
gpm	gallons per minute	VMT	Vehicle miles traveled
g/dscm	gram per dry standard cubic meter	VOC	Volatile organic compounds
gr/dscf	Grain per dry standard cubic feet (1 pound = 7000 grains)		
HAP	Hazardous Air Pollutant as defined by OAR 340-244-0040		
HCFC	Halogenated Chloro-Fluoro-Carbons		
ID	Identification label		
I&M	Inspection and maintenance		
lb	pound		
kg	kilogram		
M	thousand		
MACT	Maximum Achievable Control Technology		
MB	material balance		
Mgal	one thousand gallons		
MMBtu	one million British thermal units		

INTRODUCTION

1. In accordance with OAR 340-218-0120(1)(f), this review report is intended to provide the legal and factual basis for the draft permit conditions. In most cases, the legal basis for a permit condition is included in the permit by citing the applicable regulation. In addition, the factual basis for the requirement may be the same as the legal basis. However, when the regulation is not specific and only provides general requirements, this review report is used to provide a more thorough explanation of the factual basis for the draft permit conditions.
2. The proposed permit is a renewal of the existing Oregon Title V Operating Permit, which was issued on 7/2/12, and was scheduled to expire on 4/1/17. The current permit remains in effect until the renewal permit is issued because the permittee filed a complete and timely renewal application on 3/30/16. No permit modifications, administrative amendments or notices of approval for construction have been issued since the last permit renewal. An Off-Permit Change notification was submitted on 11/8/12 for combustion of treated sewage sludge at the facility.

This proposed renewal includes the following changes:

- a. Revising conditions concerning opacity to align with new state rules on how opacity is measured (6 minute average instead of 3 minute aggregate in an hour)
- b. Revising conditions concerning grain loading to align with new state rules concerning significant figures (e.g., 0.10 gr/dscf instead of 0.1 gr/dscf)
- c. Revising emission estimates based on a detailed review of emission factors from recent source tests (2009-2018) and CEM data (2007-2018) for the facility
- d. DEQ style (e.g., DEQ instead of Department) and template changes
- e. Correcting cross-references due to different permit condition numbering

PERMITTEE IDENTIFICATION

3. Covanta Marion, Inc. (CMI) owns and operates a Solid Waste-to-Energy Facility (Facility) in Brooks, Oregon. Construction approval for the Facility was issued by DEQ in 1983 and the Facility began operations in 1986. The primary objective of the CMI Facility is to provide for the disposal of solid waste. In order to achieve this primary objective the Facility receives, stores, and combusts solid waste as defined in Oregon Revised Statutes (ORS) 459.005 and the Facility's Solid Waste Permit. The combustible fraction of the solid waste is utilized to produce steam, which is in turn utilized in a turbine generator to produce electricity which is sold to the local utility. The Facility operates 24 hours per day, 365 days per year, except for periods of scheduled and unscheduled maintenance.

The Facility is located on approximately 16 acres east of Exit 263 on Interstate-5 on Northeast Brooklake Road. CMI provides the necessary utilities, including on-site potable and industrial water systems, and a pumping station and pipeline to the Willamette River for discharge of treated cooling and process water. Sewage services are provided by Brooks Sewer District. Electricity for in-plant use is generated by the Facility and provided by Portland General Electric (PGE) when the turbine generator is off-line. The Facility is tied to the PGE grid via the on-site switchyard. The switchyard distributes the power to the local utility power grid for sale and distribution. Natural gas service is supplied from a natural gas main located near the site.

FACILITY DESCRIPTION

4. Fuel

The Facility is authorized by DEQ to accept solid waste (under Solid Waste Permit No. 364), which is defined in OAR 340-093-0030(85) as “all useless or discarded putrescible and non-putrescible materials including, but not limited to garbage, rubbish, refuse, ashes, paper and cardboard, sewage sludge, septic tank and cesspool pumpings or other sludges, useless or discarded commercial, industrial, demolition and construction materials, discarded or abandoned vehicles or parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid materials, dead animals, and containers of infectious wastes”.

Additionally, CMI is authorized under the Solid Waste Permit to accept for disposal the following: a) cannery wastes; b) conditionally exempt small quantity generator hazardous wastes; c) narcotics, illicit drugs, and equipment and other materials used in the production of illicit drugs; d) pharmaceutical wastes such as prescription and over-the-counter drugs, and DEA-controlled substances; and e) infectious wastes. The facility may accept other wastes if it develops a Special Waste Management Plan which is approved by DEQ.

The Facility is also authorized to accept solid wastes from commercial waste collection vehicles operated by individual commercial and industrial sources and other sources approved by DEQ.

The Facility is prohibited from accepting the following: a) hazardous wastes except as provided in DEQ's Administrative Rules; b) materials used for fertilizer or for other productive purposes or which are salvageable as such materials are used on land in agricultural operations and the growing or harvesting of crops and the raising of animals; c) solid waste from individual private citizens delivering their own household wastes; d) out-of-state wastes classified as hazardous wastes in their state of origin even if such wastes would not be classified hazardous wastes if they originated in Oregon; e) lead-acid batteries; f) discarded or abandoned motor vehicles; g) off spec used oil; h) explosives; i) friable or non-friable asbestos-containing material; and j) radioactive wastes except as allowed by the source's solid waste permit for temporary storage. Undigested sewage sludge and septic pumpings are not acceptable unless specifically authorized by DEQ.

Facility Operation

After being weighed, unprocessed acceptable waste is delivered to a storage pit in the refuse building. From the pit, the waste is lifted by one of two electrically powered overhead cranes and placed into one of the two combustion units charging hoppers. Prior to being placed into one of the charging hoppers, the refuse is mixed in the pit to ensure a more homogeneous fuel mix. Mixing is accomplished by spreading freshly delivered refuse across the pit. Medical waste may be stored on site or is directly transported by conveyor from the tipping floor to one of two charging hoppers, except on rare occasions, the crane is used to deliver medical waste to the boilers.

Combustion

Combustion takes place in two boilers with integral waterwall furnaces. Each boiler operates independently of the other. The Facility can process a total of 550 tons per day of solid waste. Most SW is lifted into the charging hoppers by crane. However, some wastes, such as medical waste, are delivered to the charging hoppers via a conveyor system. To seal the feed chute from outside air infiltration, and to maintain control of the furnace draft, the hopper is kept full of solid waste.

From the feed chute, waste is pushed by hydraulic ram feeders onto the Martin Reverse-action Reciprocating Stoker Grate. The stoker system is sloped downward and is composed of alternating rows of

fixed and moving grate bars. The reciprocating grate bars push upward against the natural downward movement of the waste bed creating a constant rolling movement that ensures the waste is continually agitated. This creates an under-fire bed of burning waste onto which fresh waste is fed. A forced draft fan pulls air from above the charging hoppers to control odors and prevent them from escaping the refuse building. This fan also supplies combustion air to the underside of the stoker grate bars in volumes that are controlled to meet the necessary combustion conditions. The uniform air distribution also cools the grate bars to prolong grate bar life. Additional combustion air is introduced above the stoker at the front and rear walls of the furnace. The resulting flame turbulence prevents the escape of unburned gases from the furnace.

The combustion residue or bottom ash slowly makes its way to the end of the grate where it falls into a water quenching trough in the Martin Ash Discharger.

Inside the boiler, water-filled tubes form the furnace walls throughout the boiler. The heat from the combustion process in the furnace converts the water in the tubes to steam. The superheater further heats the steam before it is sent to a turbine which drives the generator, which produces electricity.

Exhaust steam from the turbine-generator is condensed in a water-cooled condenser. The resulting condensate is recovered and pumped back to the boilers for reuse. The heat absorbed by the condensing water is transferred and dissipated in the cooling tower located east of the main building.

Emission Controls

Cooled exhaust gases resulting from the combustion of solid waste leave the boiler and enter the air pollution control system.

Each boiler is equipped with a spray dryer absorber (SDA) for acid gas removal, a selective non-catalytic reduction (SNCR) system for control of nitrogen oxides, a dry activated carbon injection system for mercury emissions control, and a fabric filter baghouse (equipped with a bag leak detection system) for the control of particulate matter emissions. Each fabric filter baghouse is followed by an induced draft fan, which directs the cleaned flue gas to a dedicated flue in a common stack. Each unit is also equipped with continuous emission and parameter monitoring systems to provide feedback on the effectiveness of the air pollution control systems and equipment.

EMISSIONS UNIT AND POLLUTION CONTROL DEVICE IDENTIFICATION

5. The emissions units at this facility are summarized below:

Emissions Unit	EU ID	Pollution Control Device/Practice	PCD ID
Municipal waste combustor unit 1	MWC-1	Baghouse Spray Dryer Absorber Dry Activated Carbon Injection [JT1]Selective Non-catalytic Reduction	C-1 C-3 C-5 C-6
Municipal waste combustor unit 2	MWC-2	Baghouse Spray Dryer Absorber Dry Activated Carbon Injection [JT2]Selective Non-catalytic Reduction	C-2 C-4 C-5 C-6
Municipal waste combustor-Facility Total for PSEL	MWC-FT	N/A	NA
Categorically Insignificant Activities including Reciprocating Internal	RICE	None	NA

Emissions Unit	EU ID	Pollution Control Device/Practice	PCD ID
Combustion Engines			
Aggregate insignificant emissions including fugitive dust emissions from vehicle traffic on paved roads and material handling of lime and carbon.	AI	None	NA

6. Provided below is a description of each of the emissions units and control devices at this facility:

MWC-1 and MWC-2

Emissions units Municipal Waste Combustor unit 1 (MWC-1) and Municipal Waste Combustor unit 2 (MWC-2) each consist of a mass burn waterwall waste-to-energy boiler (Devices D-1 and D-2, respectively). Both boilers are manufactured by Zurn and the combustion grates are manufactured by Martin GmbH. The waste feed is continuous using a hydraulic ram. Each boiler is rated at 107 million Btu/hr heat input. The combined boilers can combust up to 550 tons of waste per day. The waste has a nominal heating value of 4,000 to 5,000 Btu/lb.

MWC-FT

Emissions unit Municipal Waste Combustor-Facility Total (MWC-FT) consists of the total emissions from all emissions units for the purpose of demonstrating compliance with the facility's plant site emission limits.

RICE

This emissions unit currently only consists of a 1986 Cummins 244 HP emergency fire pump which is considered a categorically insignificant activity.

AI

Emissions unit Aggregate Insignificant activities (AI) includes the following:

- a. Refuse delivery truck and hauling truck travel on paved roads within the facility.
- b. Pneumatic delivery of pebble and dolomitic lime into the storage silos, which are equipped with baghouses.
- c. Pneumatic delivery of carbon to the carbon storage silo which is equipped with a baghouse.

Refuse delivery trucks stop on the incoming scales to weigh and then enter the tipping floor to off-load refuse into the storage pit. To exit the facility site, the trucks travel around the enclosed ash storage building and exit onto Brooklake Road. Ash hauling trucks travel directly to the enclosed ash storage building, where they are loaded with ash for transport to the ash monofill or to a landfill. These paved areas are maintained in a clean condition by sweeping, ash is stored and transported in a wetted condition, and a cleanup program collects spilled refuse as needed.

The Facility receives deliveries of dolomitic and pebble lime, and carbon into storage silos on an as-needed basis. These materials are transferred pneumatically from the delivery trucks into the silos. The silos are equipped with baghouses to control particulate matter emissions.

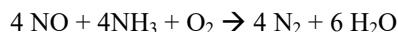
The combined particulate matter emissions from these activities are less than 1 ton/year as shown in Appendix A.

Acid Gas Controls

Semi-dry lime slurry scrubbers are used to control acid gas emissions on each boiler (control devices C-3 and C-4). The lime volumetric flow meter provided with each scrubber measures dilute slurry of varying lime concentration (i.e., weight percent) of $\text{Ca}(\text{OH})_2$ in suspension. Each spray dryer operates with a feedback control loop which uses a stack SO_2 emissions rate (as lb/hr) set point. The lime injection rate into each spray dryer increases when the stack SO_2 emission rate exceeds the set point. The scrubbers were manufactured by Teller Environmental Systems, Inc. and were installed when the plant was constructed in 1983.

NO_x Controls

In 1998, a SNCR system was installed to control NO_x emissions (control device C-6). Aqueous ammonia along with additional carrier water is injected into each furnace above the combustion grates through one nozzle positioned on the front wall of the furnace. Two additional wall boxes are provided per combustion unit (one on each side of the furnace). The alternate locations permit relocation of the injection nozzles to optimize performance, if required. The main chemical reaction forming the basis of the SNCR process is:



The principal components of the system include: an aqueous ammonia storage tank, an ammonia feed pump skid, a carrier water supply from the existing demineralized water system, a purge air system, and injection nozzles.

Hg Controls

The mercury emissions control system (control device C-5) utilizes a pneumatic feed system that injects dry activated carbon directly into the flue gas ductwork downstream of the economizer of each combustion unit. The system was installed in 1998 and consists of two independent carbon injection trains, each dedicated to one of the two combustion units. The carbon injection systems are fed from a common carbon storage silo that is equipped with a baghouse vent filter. The silo has two outlet hoppers to ensure each injection train is independently fed and controlled. From the outlet hoppers, the carbon is fed directly into dedicated surge bins, each equipped with gravimetric feeders for controlling the carbon feed rate. Each injection train is equipped with a pneumatic conveying system to transport the carbon from the feeder (using an air blower and eductor) to the flue gas duct. The carbon, containing adsorbed mercury is captured in the baghouse for disposal along with the combustion fly ash. A "Y" injection system capable of injecting carbon to both units simultaneously from one feed system is available should one of the independent systems fail.

Particulate Matter Controls

Baghouses (control devices C-1 and C-2) are used to remove particulate matter from the exhaust gas after the semi-dry lime slurry scrubbers. Each baghouse has an air-to-cloth ratio of 1.8:1. The design pressure drop is 3 inches of water at a design flow rate of 57,390 actual cubic feet per minute. Reverse air is used to clean the bags on an automatic schedule. The design removal efficiency of the AFT bags is 99.998%. The baghouses were manufactured by American Air Filter Company and installed when the municipal waste combustors were installed in 1983. A bag leak detection system was added in 2017 to Unit 1 and a second system is scheduled to be installed in Unit 2 in 2019.

Categorically insignificant activities at the facility include the following:

- Constituents of a chemical mixture present at less than 1% by weight of any chemical or compound regulated under Divisions 20 through 32 of this chapter, or less than 0.1% by weight of any carcinogen listed in the U.S. Department of Health and Human Service's Annual Report on Carcinogens when usage of the chemical mixture is less than 100,000 pounds/year
- Evaporative and tail pipe emissions from on-site motor vehicle operation
- Distillate oil, kerosene, gasoline, natural gas or propane burning equipment, provided the aggregate expected actual emissions of the equipment identified as categorically insignificant do not exceed the de minimis level for any regulated pollutant, based on the expected maximum annual operation of the equipment. If a source's expected emissions from all such equipment exceed the de minimis levels, then the source may identify a subgroup of such equipment as categorically insignificant with the remainder not categorically insignificant. The following equipment may never be included as categorically insignificant: (A) an individual distillate oil, kerosene or gasoline burning equipment with a rating greater than 0.4 million Btu/hour; (B) any individual natural gas or propane burning equipment with a rating greater than 2.0 million Btu/hour
- Office activities
- Janitorial activities
- Personal care activities

- Groundskeeping activities including, but not limited to building painting and road and parking lot maintenance
- On-site laundry facilities
- Instrument calibration
- Maintenance and repair shop
- Air cooling or ventilating equipment not designed to remove air contaminants generated by or released from associated equipment
- Bench scale laboratory equipment and laboratory equipment used exclusively for chemical and physical analysis, including associated vacuum producing devices but excluding research and development facilities
- Temporary construction activities
- Warehouse activities
- Accidental fires
- Air vents from air compressors
- Air purification systems
- Continuous emissions monitoring vent lines
- Demineralized water tanks
- Pre-treatment of municipal water, including use of deionized water purification systems
- Electrical charging stations
- Instrument air dryers and distribution
- Blueprint making
- Routine maintenance, repair, and replacement such as anticipated activities most often associated with and performed during regularly scheduled equipment outages to maintain a plant and its equipment in good operating condition, including but not limited to steam cleaning, abrasive use, and woodworking
- Electric motors
- Storage tanks, reservoirs, transfer and lubricating equipment used for ASTM grade distillate or residual fuels, lubricants, and hydraulic fluids
- On-site storage tanks not subject to any New Source Performance Standards (NSPS), including underground storage tanks (UST), storing gasoline or diesel used exclusively for fueling of the facility's fleet of vehicles
- Natural gas, propane, and liquefied petroleum gas (LPG) storage tanks and transfer equipment
- Pressurized tanks containing gaseous compounds
- Storm water settling basins
- Fire suppression and training
- Health, safety, and emergency response activities
- Emergency generators and pumps used only during loss of primary equipment or utility service due to circumstances beyond the reasonable control of the owner or operator, or to address a power emergency as determined by DEQ
- Non-contact steam vents and leaks and safety and relief valves for boiler steam distribution systems
- Non-contact steam condensate flash tanks
- Non-contact steam vents on condensate receivers, deaerators and similar equipment
- Boiler blowdown tanks
- Industrial cooling towers that do not use chromium-based water treatment chemicals
- Ash piles maintained in a wetted condition and associated handling systems and activities
- Combustion source flame safety purging on startup

EMISSION LIMITS AND STANDARDS, TESTING, MONITORING, AND RECORDKEEPING

STATE REQUIREMENTS

7. The following Chapter 340 Oregon Administrative Rules that have specific requirements (e.g., emission limits or standards, monitoring, recordkeeping, or reporting requirements) have been determined to be applicable to this facility. The "Oregon Title V Monitoring and Testing Guidance" and OAR 340 Division 230 were used to

determine the inspection and maintenance schedules and testing requirements.

340-208-0110(4):

The 20% opacity limit applies to the municipal waste combustors as well as the categorical and aggregate insignificant activities. This opacity limit is being streamlined in the permit with the more restrictive Division 230 opacity limit of 10%.

COMS are used to show compliance with the opacity limits for the municipal waste combustors.

340-208-0210(1):

Since this facility is located in a special control area, the requirement to minimize fugitive emissions by taking preventative measures applies. Measures to be taken include the following:

- 1) Maintaining paved roads and open storage areas in a clean condition.
- 2) Maintaining a cleanup program to collect any materials that may have spilled.
- 3) Storing and transporting all materials collected from the boiler grates and the air pollution control equipment in a wetted condition or other method equally or more effective in preventing materials from becoming airborne.

340-208-0300:

Air contaminants from the source are not allowed to cause a nuisance. This requirement is only enforceable by the state. The source is required to immediately investigate any air quality nuisance complaint and respond back to the complainant within 24 hours if possible. A log is to be maintained of complaints received, investigation results and actions taken. In addition, the tipping floor area must be maintained on negative draft such that air from the tipping floor area and pit area is utilized as combustion air in the boilers.

340-208-0450:

The particulate matter fallout nuisance rule applies to this facility. This requirement is only enforceable by the state. The source is required to immediately investigate any complaint and respond back to the complainant within 24 hours if possible. A log is to be maintained of complaints received, investigation results and actions taken.

OAR 340 Division 212:

Because the Emission Guidelines for Municipal Waste Combustors constructed before 9/20/84 in 40 CFR Part 60 Subpart Cb were promulgated in December 1995, Compliance Assurance Monitoring requirements are already incorporated into the rules and monitoring requirements of OAR 340 Division 230 for the two municipal waste combustors. Thus, the pollutants subject to Division 230 limits and standards are exempt from CAM. However, the general state opacity and grain loading standards are not exempt from CAM. The attached table shows the emission units at the facility and the CAM applicability. Essentially, the Division 230 monitoring requirements for a COMS on the exhausts is used to satisfy the CAM requirements for the general state opacity and grain loading standards as well as the state CAM requirements of Division 212. As the table below shows the grain loadings are well under the state standard of 0.10 gr/dscf with the COMS showing opacity below 2%, which is the normal opacity from the units.

	Unit 1		Unit 2	
	Source Test Date	gr/dscf @12% CO ₂	Opacity (%)	gr/dscf @12% CO ₂
2009	0.0082	2	0.0047	2

Source Test Date	Unit 1		Unit 2	
	gr/dscf @12% CO ₂	Opacity (%)	gr/dscf @12% CO ₂	Opacity (%)
2010	0.0064	2	0.0057	2
2011	0.0031	0	0.0044	0
2012	0.0069	0	0.0047	0
2013	0.0091	0.5	0.0065	0
2014	0.0093	2	0.00726	1
2015	0.0075	2	0.0067	2
2016	0.0039	2	0.0047	2

OAR 340 Division 215:

Greenhouse gas reporting rules are applicable to the facility because they emit greater than 2500 metric tons of CO₂e (2756 tons CO₂e). Both biogenic and anthropogenic emissions are included in Oregon reporting rules and Plant Site Emission Limits.

OAR 340 Division 222:

Plant Site Emission Limits (PSEL). The source must keep records of plant wide emissions for each pollutant on a 12- month rolling basis. The records must be updated for each 12-month period by the end of the following month.

340-228-0210(2)(b)(A):

The 0.10 gr/scf particulate matter emission limit applies to each municipal waste combustor. An annual source test conducted utilizing Oregon DEQ Method 5 will determine compliance with this standard.

OAR 340 Division 230:

Oregon incinerator rules for municipal waste combustors are applicable to the facility and are equal or more stringent than the federal rules for municipal waste combustors in 40 CFR Part 60 Subpart Cb.

OAR 340 Division 245:

The facility is subject to the new rules in OAR 340 Division 245 (Cleaner Air Oregon) which is a risk-based toxic air contaminant permitting program. After the company submitted a toxic emission inventory in 2018, DEQ analyzed the emissions submittal of the facility along with many other Oregon facilities and developed a ranking of the facilities state-wide in order to prioritize the timing of which facilities would go through the Division 245 permitting and risk analysis requirements. The Covanta facility was ranked in Group 1 of the prioritized sources, meaning it will be “called in” in 2019 to begin the risk analysis procedures. Because of the potential elongated timing for the Cleaner Air Oregon analysis process, this permit renewal will not be held up awaiting the risk analysis eventually required by Cleaner Air Oregon. When that analysis is completed in the future, the permit will be modified accordingly.

Insignificant Emissions Units

As identified earlier in this Review Report, this facility has insignificant emissions units (IEUs) that include categorically insignificant activities and aggregate insignificant emissions. For the most part, the standards that apply to IEUs are for opacity (20% limit) and particulate matter (gr/dscf limits). DEQ does not consider it likely that IEUs could exceed an applicable emissions limit or standard because IEUs are generally equipment or activities that do not have any emission controls (e.g., small natural gas fired space heaters) and do not typically have visible emissions. Since there are no controls, no visible emissions, and the emissions are less than one ton per year, DEQ does not believe that monitoring, recordkeeping, or reporting is necessary for assuring compliance with the standards.

FEDERAL REQUIREMENTS

8. The applicability of various federal requirements are as follows:

NSPS (40 CFR Part 60)

Emission Guidelines for Municipal Waste Combustors constructed before 9/20/84 in 40 CFR Part 60 Subpart Cb (12/95) apply to this facility because it was permitted for construction and operation in December 1983 even though it only became operational in 1986. Applicable requirements of this rule have been previously incorporated into the permit and updated to reflect more stringent standards for some pollutants in OAR 340 Division 230.

The Reciprocating Internal Combustion Engine NSPS does not apply to the emergency fire pump because it was manufactured prior to the applicability date for new engines.

NESHAP (40 CFR Part 63)

The facility is a major source of hazardous air pollutants. However it is not currently subject to National Emissions Standards for Hazardous Air Pollutants Regulations except for the following.

- National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) are applicable to the existing emergency fire pump at the facility. Applicable requirements were placed into the permit during the last renewal and will be expanded in this renewal.

Commercial and Industrial Solid Waste Incinerator (CISWI) Rules in 40 CFR Part 63 do not apply to this facility because the 40 CFR Part 60 Subpart Cb rules exempt it from CISWI.

Compliance Assurance Monitoring (CAM) (40 CFR Part 64)

Because the Emission Guidelines for Municipal Waste Combustors constructed before 9/20/84 in 40 CFR Part 60 Subpart Cb were promulgated in December 1995, Compliance Assurance Monitoring requirements are already incorporated into the rules and monitoring requirements of OAR 340 Division 230 for the two municipal waste combustors. Thus, the pollutants subject to Division 230 limits and standards are exempt from CAM. However, the general state opacity and grain loading standards are not exempt from CAM. The attached table shows the emission units at the facility and the CAM applicability. Essentially, the Division 230 monitoring requirements are used to satisfy the CAM requirements for the general state opacity and grain loading standards.

Accidental Release (40 CFR Part 68)

The facility is not subject to this regulation, which requires a risk management plan for toxic and flammable substances releases.

GHG Title V permitting and PSD requirements (40 CFR parts 51, 52, 70 and 71) and GHG Reporting Program (40 CFR Part 98)

The CO₂ emissions from wood combustion were not considered for GHG permitting in the last renewal due to EPA's deferral for biogenic sources in existence at the time of the last renewal. However, the deferral has expired and now CO₂ emissions must be considered from wood combustion. As such, the baseline and proposed PSELs have been recalculated under the latest GHG rules. The proposed GHG emissions are above the DEQ de minimis level for establishing a PSEL and the company must report their GHG emissions annually to DEQ as well as to EPA.

PLANT SITE EMISSION LIMITS

BASELINE EMISSION RATE

9. This facility did not operate nor was it permitted to operate during the baseline period of 1977 or 1978. Therefore the baseline emission rate is zero for all pollutants, except GHGs. No baseline is being established for PM_{2.5} per OAR 340-222-0048(3). The GHG baseline emission rate is being set according to OAR 340-222-0048(1)(b) and is based on calendar year 2003 as requested by the permittee in the last permit renewal.

FACILITY HISTORY

10. In December 1983, DEQ issued air, water, and solid waste permits for the construction and operation of the Facility. The Air Contaminant Discharge Permit (ACDP) established operating and emission conditions for the Facility based on a determination of Best Available Control Technology (BACT), ambient impact modeling, and other criteria in accordance with the Prevention of Significant Deterioration (PSD) requirements of then OAR 340-028-1940 for PM/PM₁₀, CO, NO_x, SO₂, Pb, MWC Organics (PCDD/PCDF), F, MWC metals, and MWC acid gases. The Facility became operational in 1986 and has operated continuously since that time. A PSD permit action also occurred in 1988 for a NO_x emissions increase from the facility.

PROPOSED PLANT SITE EMISSION LIMITS (PSEL)

11. The proposed annual Plant Site Emission Limit calculations are shown in the attached detail sheets and are summarized below.

Pollutant	Baseline Emission Rate (tons/yr)	Netting Basis			Plant Site Emission Limit (PSEL)		
		Original 1983	Previous (tons/yr)	Proposed (tons/yr)	Previous PSEL (tons/yr)	Proposed PSEL (tons/yr)	PSEL Increase (tons/yr)
PM	0	61	49	49	24	24	---
PM ₁₀	0	61	29	29	14	16	2
PM _{2.5}	NA	NA	22	26	12	16	4
CO	0	170	139	170	99	99	---
NO _x	0	290	360	360	337	337	---
SO ₂	0	220	79	79	39	39	---
VOC	0	0	0	0	De minimis	39	39
Pb	0	1.6	0.6	1.6	De minimis	De minimis	---
MWC Organics (PCDD/PCDF)	0	2.8x10 ⁻⁴	6.5x10 ⁻⁶	6.5x10 ⁻⁶	3.0x10 ⁻⁶	3.0x10 ⁻⁶	---
F	0	4.8	3	3	De minimis	De minimis	---

MWC Acid Gases (HCl+SO ₂)	0	289	95	82	55	42	-13
MWC Metals (Hg+Cd+Pb)	0	2.1	2.1	2.1	De minimis	De minimis	---
GHGs (CO ₂ e)	196,000	NA	92,200	196,000	107,100	214,400	107,300

- a. The baseline period is 1978 for all pollutants, except GHGs. The baseline emission rate for GHGs is based on the emissions during 2003 as requested by the company and allowed by OAR 340-222-0048(1)(b). No baseline emission rate is being established for PM_{2.5} per OAR 340-222-0048(3).
- b. The netting basis for all pollutants, except VOC, PM_{2.5}, and GHGs, was originally established in a 1983 Prevention of Significant Deterioration approval.
 - b.i. The NO_x netting basis was originally established at 290 T/Y in the 1983 PSD permitting action. It was increased to 492 T/Y in a 1988 PSD permitting action. New rules in 1998 required a reduction in NO_x emissions resulting in the netting basis being decreased to 360 T/Y.
 - b.ii. The original 1983 PSD approval level for dioxins was based on a TCDD value of 5.1×10^{-6} T/Y. This value has been converted to a PCDD/PCDF basis using source test results and are expressed as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans.
 - b.iii. The 1983 PSD permitting action did not address cadmium. Thus the original netting basis for MWC metals is the sum of the mercury and lead levels = $0.5 + 1.6 = 2.1$ T/Y.
 - b.iv. The initial netting basis for PM_{2.5} was established for the first time in the last renewal in accordance with OAR 340-222-0046(1)(a) and (2)(b).
 - b.v. The netting basis for GHGs was established for the first time in the last permit renewal and was equal to the baseline emission rate for GHGs. The baseline and netting basis for GHGs are being recalculated in this permit renewal based on the latest EPA GHG rules (no biogenic deferral).
- c. In accordance with OAR 340-222-0041(2), the proposed PSELs for PM₁₀, PM_{2.5}, NO_x, MWC Acid Gases, and GHGs are being set at the source's potential to emit since they are greater than the SERs.
- d. In accordance with OAR 340-222-0020(3)(a), no PSEL is being established for Pb, F, or MWC Metals as the potential emissions are less than the de minimis levels in OAR 340-200-0020(31).
- e. The PM, SO₂, CO, VOC, and MWC Organics PSELs are being set at the generic PSEL levels in accordance with OAR 340-222-0041(1) since the projected emission levels are less than the SER but greater than the de minimis levels.
- f. The changes in the PSELs for all pollutants from the last permit reflect emission factor changes from source test results and CEM data since the last permit.
- g. Because the Unassigned Emissions are equal to or less than the SER for all pollutants, no reductions to the Unassigned Emissions and Netting Basis will be made at this permit renewal per OAR 340-222-0055(3).
- h. The PSEL is a federally enforceable limit on the potential to emit.

COMPONENTS OF THE PROPOSED PSEL

Based on more recent source test data on the municipal waste combustor units and the addition of PM_{2.5} and GHGs as regulated pollutants, the netting basis for the facility is now as follows:

Pollutant	New Netting Basis (tons/year)
PM	49
PM ₁₀	29
PM _{2.5}	26
CO	170
NO _x	360
SO ₂	79
VOC	-0-
Pb	1.6
MWC Organics (PCDD/PCDF)	6.5x10 ⁻⁶
F	3
MWC Acid Gases (HCl+SO ₂)	82
MWC Metals (Hg+Cd+Pb)	2.1
GHG (CO ₂ e)	196,000

The components of the PSEL are as follows:

Pollutant	PSEL (tons/yr)	Unassigned Emissions (tons/yr)
PM	24	25
PM ₁₀	16	13
PM _{2.5}	16	10
CO	99	71
NO _x	337	23
SO ₂	39	40
VOC	39	-0-
MWC Organics (PCDD/PCDF)	3.0x10 ⁻⁶	3.5x10 ⁻⁶
MWC Acid Gases (HCl+SO ₂)	53	40
MWC Metals (Hg+Cd+Pb)	---	2.1
Pb	---	1.6
F	---	3
GHG (CO ₂ e)	214,400	-0-

SIGNIFICANT EMISSION RATE COMPARISON

The proposed Plant Site Emission Limits are less than the netting basis or less than the netting basis plus the Significant Emission Rate for all pollutants so no further air quality analysis is required.

Pollutant	SER (tons/yr)	Requested increase over netting basis (tons/yr)
PM	25	-0-
PM ₁₀	15	-0-
PM _{2.5}	10	-0-
CO	100	-0-
NO _x	40	-0-
SO ₂	40	-0-
VOC	40	39
Pb	0.6	-0-
MWC Organics (PCDD/PCDF)	3.5x10 ⁻⁶	-0-
F	3	-0-
MWC Acid Gases (HCl+SO ₂)	40	-0-
MWC Metals (Hg + Cd + Pb)	15	-0-
GHG (CO ₂ e)	75,000	18,400

The following control equipment has been added since the startup of the facility.

Control Equipment	Installation Date
Selective Non-Catalytic Reduction Systems	1998
Activated Carbon Injection Systems	1998
Bag Leak Detection System	2017 and 2019

HAZARDOUS AIR POLLUTANTS

12. The facility is a major source of Hazardous Air Pollutants because it is estimated that the source has the potential to emit greater than 10 tons per year of an individual HAP and is subject to the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) which are applicable to the existing emergency fire pump at the facility. Applicable requirements were placed into the permit during the last renewal and will be expanded in this renewal.

[JT3]

Hazardous air pollutant emissions at the proposed operation levels are summarized in the following table based on emission factors derived from 2009-2018 source tests. In addition to the projected emissions estimates below, the company also recently submitted information to DEQ under the Cleaner Air Oregon initiative. The Cleaner Air Oregon initiative prioritized sources for call-in under the program. This facility is in the first call-in list of twenty sources which means it will likely be called in to do a detailed risk assessment within the first twelve months of the program or by 3/1/20.

Pollutant	Potential to emit (tons/year)
Lead	0.0035
Total Dioxin/furans	1.1x10 ⁻⁶
Mercury	0.0032

Cadmium	0.0009
Hydrogen Chloride	14.3
Arsenic	
Chromium VI	
Hydrogen Fluoride	
Nickel	
Total HAPS	14.3

STRATOSPHERIC OZONE DEPLETING SUBSTANCES

13. CMI does not manufacture, sell, distribute, or use in the manufacturing of a product any stratospheric ozone-depleting substances. Therefore, the 1990 Clean Air Act, as amended, Sections 601-608, do not apply to the facility except that air conditioning and fire extinguishers or other equipment containing Class I or Class II substances must be serviced by certified repairmen to ensure that the substances are recycled or destroyed appropriately.

TEST METHODS AND PROCEDURES

14. The permittee is required to conduct annual particulate matter, opacity, lead, cadmium, mercury, dioxin/furans, and hydrogen chloride performance tests on each of the two municipal waste combustors. In addition, the permittee is required to perform annual performance tests for visible emissions from the ash handling system. For dioxin/furans, the permittee may conduct the annual tests on one of the two municipal waste combustors provided the test results over a two year period show that the emissions from both municipal waste combustors are less than 15 ng/dscm @ 7% O₂. If any annual performance test indicates a dioxin/furan emission level of greater than 15 ng/dscm @ 7% O₂, performance tests thereafter shall be conducted annually on both of the municipal waste combustor units until and unless all annual performance tests for both municipal waste combustor units over a two year period indicate a dioxin/furan emission level less than or equal to 15 ng/dscm @ 7% O₂. Performance test reports shall be submitted to DEQ within 60 days following the completion of the performance test.

MONITORING REQUIREMENTS

15. The source has determined, and DEQ agrees, that Compliance Assurance Monitoring (CAM) is applicable for particulate matter emissions from emissions units MWC-1 and MWC-2. However, the monitoring already required in the permit has been determined to be sufficient for CAM purposes and no additional monitoring is being required. [JT4]

16. As identified earlier in this Review Report, this facility has insignificant emissions units (IEUs) that include categorically insignificant activities and aggregate insignificant emissions, as defined in OAR 340-200-0020. For the most part, the standards that apply to IEUs are for opacity (20% limit) and particulate matter (gr/dscf limits). DEQ does not consider it likely that IEUs could exceed an applicable emissions limit or standard because IEUs are generally equipment or activities that do not have any emission controls (e.g., small natural gas fired space heaters) and do not typically have visible emissions. Since there are no controls, no visible emissions, and the emissions are less than one ton per year, DEQ does not believe monitoring, recordkeeping, or reporting is necessary for assuring compliance with the standards.
[JT5]

17. In addition to the testing described above, the permittee shall continuously monitor opacity, sulfur dioxide emissions, nitrogen oxides emissions, carbon monoxide emissions, diluent gas concentrations, unit load, PM control device inlet temperature, and carbon injection parameters. Continuous monitoring shall be

performed in accordance with state and federal requirements such that the data will be reliable and accurate, including periodic calibrations and RATA. The permittee is also required to prepare an operating manual and train the operators on an annual basis. The operating manual addresses good combustion practices and startup, shutdown, and malfunction procedures.

RECORDKEEPING REQUIREMENTS

18. The permit includes requirements for maintaining records of all monitoring and testing information. These records include test results, continuous emissions monitoring data and QA/QC, parameter monitoring data, visible emissions data, the date and time of measurements; and, all corrective actions, including the date, time, and outcome.

REPORTING REQUIREMENTS

19. The permit includes requirements for submitting semi-annual and annual monitoring reports that include compliance certifications. The annual monitoring report will also include operation data, emissions inventory data, and an emissions fee report. The permittee is required to immediately notify DEQ of any excess emissions and keep records of the excess emissions.

GENERAL BACKGROUND INFORMATION

20. Other permits issued or required by the Department include:

- Solid Waste Permit 364
- NPDES Wastewater Discharge Permit 101240
- NPDES Stormwater Discharge Permit 1200-Z

21. This source is located in an area that is currently designated as maintenance for carbon monoxide and ozone and attainment for all other pollutants. The source is located within 200 kilometers of 6 designated Class I or scenic areas but is not located within 10 kilometers of any Class I area. The facility is located approximately 25 km from the Portland maintenance area for CO and ozone.

COMPLIANCE HISTORY

22. DEQ staff inspected the facility on 8/23/18, 8/22/16, 6/18/14, and 6/19/12 and found it to be in compliance with all permit conditions.

23. Only one air quality related complaint was received by DEQ during the prior permit period. A complaint on 3/16/15 regarding odors from the facility could not be substantiated by DEQ personnel. Plant personnel also received and investigated 6 complaints in 2015 and 2016 regarding odors but could not correlate the odors with plant operations.

24. DEQ has taken no formal enforcement actions against the source since the last permit renewal.

SOURCE TEST RESULTS

25. Summaries of the results of recent performance source tests are attached.

PUBLIC NOTICE

26. Because this is a Title V permit renewal, which is a Category III permitting action, the permit will be placed on a **35-day public notice period from Sept. 26, 2019 to Oct. 31, 2019**. Comments may be submitted in writing during the comment period. DEQ will hold a public hearing if requested by 10 or more individuals

or one person representing a group of 10 or more individuals. After the comment period and hearing, if requested, DEQ will review the comments and modify the permit as may be appropriate. A proposed permit will be sent to EPA for a 45 day review period. DEQ may request and EPA may agree to an expedited review of 5 days if there were no substantive or adverse comments during the comment period.

If EPA does not object in writing, any person may petition the EPA within 60 days after the expiration of EPA's 45-day review period to make such objection. Any such petition must be based only on objections to the permit that were raised with reasonable specificity during the public comment period provided for in OAR 340-218-0210, unless the petitioner demonstrates it was impracticable to raise such objections within such period, or unless the grounds for such objection arose after such period.

EMISSION DETAIL SHEETS AND ATTACHMENTS

Proposed Emissions

Netting Basis Emissions and Historical Notes

GHG Baseline Emissions

Source Test Results and CEM Data

CAM Table

APPENDIX A

PROPOSED PSEL CALCULATION DETAIL SHEETS

Covanta Marion
EMISSION CALCULATION DETAIL SHEET
Proposed Operations

Pollutant: PM

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	0.0225 lb/k lb steam	2009-2018 STs	14.6
AI	--	--	--	1.0
Total PM				15.6

Because the projected emissions are greater than the de minimis value but less than the SER, The PM PSEL will be set at the generic emission level of 24 tons per year.

Pollutant: PM₁₀

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	0.0225 lb/k lb steam	DEQ Factor (PM ₁₀ = 100% PM)	14.6
AI	--	--	---	1.0
Total PM₁₀				15.6

Because the projected emissions are greater than the SER, the PM₁₀ PSEL will be set at a source specific emission level of 16 tons per year.

Pollutant: PM_{2.5}

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	0.0225 lb/k lb steam	DEQ Factor (PM _{2.5} = 100% PM ₁₀)	14.6
AI	--	--	---	1.0
Total PM_{2.5}				15.6

Because the projected emissions are greater than the SER, the PM_{2.5} PSEL will be set at a source specific emission level of 16 tons per year.

Pollutant: VOC

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	17,520 hours	0.22 lb/hr	1999 ST	1.9
Total VOC				1.9

Because the projected emissions are greater than the de minimis value of 1 ton/year but less than the SER, the VOC PSEL will be set at the Generic PSEL level of 39 tons/year.

Pollutant: CO

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	0.066 lb/k lb steam	Max. of 2007-2018 CEM data	42.9
			Total CO	42.9

Because the projected emissions are greater than the de minimis value but less than the SER, the CO PSEL will be set at the generic emission level of 99 tons per year.

Pollutant: SO₂

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	0.0429 lb/k lb steam	Max. of 2007-2018 CEM data	27.9
			Total SO₂	27.9

Because the projected emissions are greater than the de minimis value but less than the SER, the SO₂ PSEL will be set at the generic emission level of 39 tons per year.

Pollutant: NO_x

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	0.519 lb/k lb steam	Max. of 2007-2018 CEM data	337.4
			Total NO_x	337.4

Because the projected emissions are greater than the SER, the NO_x PSEL will be set at a source specific emission level of 337 tons per year.

Pollutant: Pb

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	5.55E-6 lb/k lb steam	2009-2018 STs	0.0036
			Total Pb	0.0036

Because the projected emissions are less than the de minimis value of 0.1 ton/year, no PSEL is required.

Pollutant: Municipal Waste Combustor Acid Gases

For purposes of the PSEL, MWC Acid Gases are measured as the sum of sulfur dioxide and hydrogen chloride gases.

Pollutant: SO₂

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	0.0429 lb/k lb steam	Max. of 2007-2018 CEM data	27.9
			Total SO₂	27.9

Pollutant: HCl

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	0.022 lb/k lb steam	2009-2018 STs	14.3
			Total HCl	14.3

MWC Acid Gases PSEL = SO₂ + HCl = 27.9 + 14.3 = 42 tons/year

Pollutant: Municipal Waste Combustor Metals

For purposes of the PSEL, MWC Metals (measured as particulate matter using EPA Method 29) consists of the sum of mercury (Hg), cadmium (Cd), and lead (Pb) emissions.

Pollutant: Pb

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	5.55E-6 lb/k lb steam	2009-2018 STs	0.0036
			Total Pb	0.0036

Pollutant: Hg

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	4.99E-6 lb/k lb steam	2009-2018 STs	0.0032
			Total Hg	0.0032

Pollutant: Cd

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	1.36E-6 lb/k lb steam	2009-2018 STs	0.0009

			Total Cd	0.0009
--	--	--	-----------------	---------------

MWC Metals PSEL = Hg + Cd + Pb = 0.0036 + 0.0009 + 0.0032 = 0.0077 tons/year, which is less than the de minimis level of 1 ton/year, thus no PSEL is required.

Pollutant: F

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	17,520 hours	6.94E-3 lb/hr	1998 – 2001 STs	0.061
			Total F	0.061

Because the projected emissions are less than the de minimis value of 3 ton/year, no PSEL is required.

Pollutant: Municipal Waste Combustor Organics (PCDD/PCDF)

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	1.69E-9 lb/k lb steam	2009-2018 STs	1.1E-6
			Total MWC Organics	1.1E-6

Because the projected emissions are greater than the de minimis value of 0.5E-6 but less than the SER, the MWC Organics (Dioxins/Furans) PSEL will be set at the Generic PSEL level of 3.0E-6 tons per year.

Pollutant: GHGs (without biomass exemption)

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT-MSW	1,300,000 k lbs steam	328.88 lb/k lb steam	40 CFR Part 98 Subpart C	213,775
MWC-FT-NG	10 MMcf NG	120,494 lb/MMcf	40 CFR Part 98 Subpart C	602
			Total GHGs	214,377

Because the projected emissions are greater than the SER, the GHG PSEL will be set at 214,400 tons CO₂e per year due to rounding.

Aggregate Insignificant Emissions

Pollutant: PM

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
Carbon Unloading	150 tons	0.001 ton/ton	99.9% BH	0.15
Lime Unloading	3000 tons	0.0022 lb/ton	AP-42 Table 11.17-4 with 99.9% BH	0.003
Paved Roads—loaded trucks	3900 VMT	0.048 lb/VMT	AP-42 13.2.1 with 75% sweeping control	0.09
Paved Roads—unloaded trucks	15,600 VMT	0.035 lb/VMT		0.27
			Total PM	0.51

Pollutant: PM₁₀

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
Carbon Unloading	150 tons	0.001 ton/ton	100% of PM	0.15
Lime Unloading	3000 tons	0.0001 ton/ton	100% of PM	0.003
Paved Roads	0.36 tons PM	20% of PM	AP-42 13.2.1	0.07
			Total PM₁₀	0.22

Pollutant: PM_{2.5}

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
Carbon Unloading	150 tons	0.001 ton/ton	100% of PM	0.15
Lime Unloading	3000 tons	0.0001 ton/ton	100% of PM	0.003
Paved Roads	0.36 tons PM	5% of PM	AP-42 13.2.1	0.02
			Total PM_{2.5}	0.17

APPENDIX B

NETTING BASIS DETAIL SHEETS And Historical Notes

Covanta Marion
EMISSION CALCULATION DETAIL SHEET
Netting Basis

Pollutant: PM (PSEL + SER) [JT6]

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	0.0225 lb/k lb steam	2009-2018 STs	14.6
AI	--	--	--	1.0
Generic PSEL addition				8.4
Unassigned (SER)				25
			Total PM	49

Pollutant: PM₁₀ (PSEL + unassigned)

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	0.0225 lb/k lb steam	DEQ Factor (PM ₁₀ = 100% PM)	14.6
AI	--	--	---	1.0
Unassigned				13
			Total PM₁₀	29

Pollutant: PM_{2.5} (PSEL + SER)

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	0.0225 lb/k lb steam	DEQ Factor (PM _{2.5} = 100% PM ₁₀)	14.6
AI	--	--	---	1.0
Unassigned (SER)				10
			Total PM_{2.5}	26

Pollutant: CO (PSEL + unassigned)

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	0.066 lb/k lb steam	Max. of 2007-2018 CEM data	42.9
Generic PSEL addition				56.1
Unassigned				71
			Total CO	170

Pollutant: SO₂ (PSEL + SER)

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	0.0429 lb/k lb steam	Max. of 2007-2018 CEM data	27.9
Generic PSEL addition				11.1
Unassigned (SER)				40
		Total SO₂		79

Pollutant: NO_x (1998 Rule Limit)

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	200 ppm each stack	1998 Rule Limit	360
			Total NO_x	360

(a) NO_x Emission Limit:

$$\text{lb NO}_x / 10^6 \text{ Btu Heat Input} = [200 \text{ ppm} / 10^6] \times [46 \text{ lbs / lb mole}] \times [1 \text{ mole} / 385.3 \text{ dscf}] \times [9595 \text{ dscf} / 10^6 \text{ Btu}] \times [20.9 / (20.9 - 7\% \text{ O}_2)] \\ = 0.3445 \text{ lb NO}_x / 10^6 \text{ Btu}$$

Heat Input = 1,608,000 Btu / 1000 lb steam

$$\text{NO}_x \text{ Emissions} = [1,608,000 \text{ Btu} / 1000 \text{ lb steam}] \times [0.3445 \text{ lb NO}_x / 10^6 \text{ Btu}] \times [1,300,000,000 \text{ lb steam} / \text{year}] \times [1 \text{ ton} / 2000 \text{ lb}] = 360 \text{ tons / year.}$$

Pollutant: Pb (PSEL + SER)

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	5.55E-6 lb/k lb steam	2009-2018 STs	-0- (0.0036)
Unassigned (SER)				0.6
			Total Pb	0.6

Pollutant: Municipal Waste Combustor Acid Gases

For purposes of the netting basis, MWC Acid Gases are measured as the sum of sulfur dioxide and hydrogen chloride gases.

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT---SO ₂	1,300,000 k lbs steam	0.0429 lb/k lb steam	Max. of 2007-2018 CEM data	27.9
MWC-FT---HCl	1,300,000 k lbs steam	0.022 lb/k lb steam	2009-2018 STs	14.3
Unassigned (SER)				40
			Total MWC Acid Gases	82

Pollutant: Municipal Waste Combustor Metals

For purposes of the netting basis, MWC Metals (measured as particulate matter using EPA Method 29) consists of the sum of mercury (Hg), cadmium (Cd), and lead (Pb) emissions.

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT—Pb	1,300,000 k lbs steam	5.55E-6 lb/K lb steam	2009-2018 STs	0.0036
MWC-FT—Hg	1,300,000 k lbs steam	4.99E-6 lb/k lb steam	2009-2018 STs	0.0033
MWC-FT—Cd	1,300,000 k lbs steam	1.36E-6 lb/k lb steam	2009-2018 STs	0.0009
Unassigned (SER)				2.1
			Total MWC Metals	2.1

Pollutant: F (PSEL + SER)

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	17,520 hours	6.94E-3 lb/hr	1998 – 2001 STs	-0- (0.061)
Unassigned (SER)				3
			Total F	3

Pollutant: Municipal Waste Combustor Organics (PCDD/PCDF) (PSEL + SER)

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,300,000 k lbs steam	1.69E-9 lb/ k lb steam	2009-2018 STs	1.1E-6
Generic PSEL addition				1.9E-6
Unassigned (SER)				3.5E-6
			Total MWC Organics	6.5E-6

Pollutant: GHGs (without biomass exemption) (baseline 2003)

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,120,000 k lbs steam	349.95 lb/k lb steam	Based on EF from 2009 GHG Report	195,972
			Total GHGs	195,972

The netting basis will be rounded to 196,000 tons CO₂e per year.

Covanta Marion, Inc.

Netting Basis Historical Notes

Pollutant	Date or Permit Issuance Date	Netting Basis (tons/yr)	PSEL (tons/yr)	Unassigned Emissions (tons/yr)	Comment
PM	Baseline	0	0	0	Not in operation
	1983 PSD	69	69	0	PSD permit issued
	7/1/07	49	24	25	PSEL should have been generic, so unassigned reduced to SER and NB reduced the same
	9/1/07 permit	49	24	25	PSEL still generic so unassigned and NB unchanged
	7/2/12 permit				
	2019 permit				
PM ₁₀	Baseline	0	0	0	Not in operation
	1983 PSD	69	69	0	PSD permit issued
	7/1/07	29	14	15	PSEL should have been generic, so unassigned reduced to SER and NB reduced the same
	9/1/07 permit	29	14	15	PSEL still generic so unassigned and NB unchanged
	7/2/12 permit				
	2019 permit	29	16	13	PSEL increased to 16 from ST data, unassigned reduced by 2 to 13 while NB remains unchanged
PM _{2.5}	Baseline	0	0	0	Not in operation, PM _{2.5} not a regulated pollutant

	1983 PSD	0	0	0	PSD permit issued, PM _{2.5} not a regulated pollutant
	7/1/07	0	0	0	PM _{2.5} not a regulated pollutant
	9/1/07 permit				
	5/1/11	29			PM _{2.5} becomes a regulated pollutant, NB should equal PM ₁₀ NB as of this date
	7/2/12 permit	22	12	10	NB set at PSEL plus SER
	2019 permit	26	16	10	PSEL increased to 16 from ST data, unassigned remains at 10, so NB is reduced to PSEL plus unassigned
CO	Baseline	0	0	0	Not in operation
	1983 PSD	170	170	0	PSD permit issued
	7/1/07	170	99	71	PSEL was generic, unassigned was less than SER so no reduction of NB required
	9/1/07 permit				
	7/2/12 permit	139	99	71	NB incorrectly reduced to 139 (PSEL plus 40 (not SER))
	2019 permit	170	99	71	NB corrected as PSEL plus unassigned
NO _x	Baseline	0	0	0	Not in operation
	1983 PSD	290	290	0	PSD permit issued
	1988 PSD	492	492	0	PSD action added 202 tons to PSEL and NB
	1998	364	369	128	Rule change reduced allowable to 200 ppm reducing NB by 128 which became unassigned
	7/1/07	364	369	40	Unassigned should have been reduced to 40 but NB stays at

				rule limit
9/1/07 permit	364	369	0	Unassigned was incorrectly reduced to zero
2009	364	369	0	Rule change increased limit to 205 ppm but NB can't be increased
7/2/12 permit	360	337	23	PSEL reduced from CEM data, NB recalculated at 360 using 1998 rule limit, unassigned equals NB minus PSEL
2019 permit	360	337	23	No changes as PSEL still the same from CEM data
SO ₂	Baseline	0	0	Not in operation
	1983 PSD	220	220	0
				PSD permit issued
	7/1/07	220	220	0
	9/1/07 permit			
				No change in PSEL so no change to NB or unassigned
Pb	7/2/12 permit	79	39	40
				PSEL reduced to 39 (generic) from CEM data, unassigned reduced to SER, NB equals PSEL plus unassigned
	2019 permit	79	39	40
				No change in PSEL so no change to unassigned or NB
	Baseline	0	0	Not in operation
	1983 PSD	1.6	1.6	0
				PSD permit issued
	7/1/07	0.6	0	0.6
	9/1/07 permit			
				PSEL was zero since projected emission less than de minimis, unassigned reduced to SER, NB equals unassigned
	2009	0.6	0	0.6
				Although a rule change reduced the emission limit from 0.44 to 0.20 mg/dscm, the PSEL was zero and not based on the emission limit but

					instead on ST data and thus the NB or unassigned was not reduced
	7/2/12 permit	0.6	0	0.6	No change in PSEL so no change to unassigned or NB
	2019 permit				
MWC Metals (Pb+Cd+Hg)	Baseline	0	0	0	Not in operation
	1983 PSD	2.1	2.1	0	PSD permit issued (only Pb and Hg considered)
	7/1/07	2.1	0	2.1	PSEL was zero since projected emission less than de minimis, unassigned reduced to SER, NB equals unassigned
	9/1/07 permit				
	2009	2.1	0	2.1	Although a rule change reduced the emission limits for all three metals , the PSEL was zero and not based on the emission limits but instead on ST data and thus the NB or unassigned was not reduced
MWC Acid Gases (SO ₂ +HCl)	7/2/12 permit	2.1	0	2.1	No change in PSEL so no change to unassigned or NB
	2019 permit				
	Baseline	0	0	0	Not in operation
	1983 PSD	289	289	0	PSD permit issued (220 SO ₂ , 69 HCl)
	7/1/07	289	289	0	No change in PSEL so no change to NB or unassigned
	9/1/07 permit	280	240	40	PSEL reduced due to CEM and ST data, unassigned reduced to SER, NB equals PSEL plus unassigned
	7/2/12 permit	95	55	40	PSEL reduced due to CEM and ST data, unassigned stays at SER, NB equals PSEL plus unassigned

	2019 permit	82	42	40	PSEL reduced to 42 to correct acid gas calculation, unassigned stays at SER, NB equals PSEL plus unassigned
F	Baseline	0	0	0	Not in operation
	1983 PSD	4.8	4.8	0	PSD permit issued
	7/1/07	3	0	3	PSEL was zero since projected emission less than de minimis, unassigned reduced to SER, NB equals unassigned
	9/1/07 permit				
	7/2/12 permit				
	2019 permit				
Dioxins	Baseline	0	0	0	Not in operation
	1983 PSD	2.8E-4	2.8E-4	0	PSD permit issued
	7/1/07	6.5E-6	3.0E-6	3.5E-6	PSEL was generic based on ST data, unassigned set at SER, NB equals PSEL plus unassigned
	9/1/07 permit				
	2009	6.5E-6	3.0E-6	3.5E-6	Although a rule change reduced the emission limit for dioxins , the PSEL was based on ST data and thus the NB or unassigned was not reduced
	7/2/12 permit	6.5E-6	3.0E-6	3.5E-6	No change in PSEL so no change to unassigned or NB
	2019 permit				
VOC	Baseline	0	0	0	Not in operation
	1983 PSD	0	0	0	PSD permit issued, VOC did not go through PSD
	5/11/98 permit	0	9.4	0	PSEL based on 1986-1997 STs
	12/27/01 permit	0	39	0	PSEL became generic based on 1986-1997 STs and new DEQ rules

7/1/07	0	0	0	PSEL was zero since projected emission less than de minimis based on 1998-2001 ST data, unassigned and NB remain at zero
9/1/07 permit				
7/2/12 permit				

APPENDIX C

Covanta Marion
EMISSION CALCULATION DETAIL SHEET
GHG Baseline (2003)

Pollutant: GHGs (without biomass exemption) (baseline 2003)

Source	Production Parameter	Emission Factor	Reference	Emissions (tons/year)
MWC-FT	1,120,000 k lbs steam	349.95 lb/k lb steam	Based on EF from 2009 GHG Report	195,972
			Total GHGs	195,972

Note: The GHG baseline will be set at 196,000 tons CO₂e per year due to rounding.

APPENDIX D

Source Test Results And CEM Data

Source Tests

VOC

Date	Unit 1 (lb/hr)	Unit 2 (lb/hr)
1998	0.158	0.099
1999	0.220	0.054
2000	0.127	0.053
2001	0.021	0.052
Avg.	0.132	0.065
Grand Avg.	0.0985	

F

Date	Unit 1 (lb/hr)	Unit 2 (lb/hr)
1998	<7.74E-3	<8.17E-3
1999	<6.79E-3	<6.34E-3
2000	<6.73E-3	<7.27E-3
2001	<6.23E-3	<6.20E-3
Avg.	6.87E-3	7.00E-3
Grand Avg.	6.94E-3	

Covanta Source Test Results

Particulate Matter (Filterable PM)

[mg/dscm @ 7% O₂]

Date	Unit 1	Unit 2	Regulatory Limit – Each Unit
2009	15.15	5.42	27
2010	1.23	1.88	25
2011	6.23	6.62	25
2012	5.49	5.64	25
2013	5.64	7.05	25
2014	10.8	6.09	25
2015	6.42	5.31	25
2016	2.82	2.80	25
2017	2.38	4.24	25
2018	13.1	20.0	25
Sum	69.26	65.05	
Average	6.93	6.51	25
Range	1.23-15.15	1.88-20.0	
Range Factor	12	11	

Particulate Matter (Total PM)

Date	Unit 1				Unit 2			
	gr/dscf @12% CO ₂	Lb/hr	K lb steam/hr	Lb/K lb steam	gr/dscf @12% CO ₂	Lb/hr	K lb steam/hr	Lb/K lb steam
2009	0.0082	1.91	69.4	0.0274	0.0047	1.08	68.2	0.0159
2010	0.0064	1.24	69.0	0.0179	0.0057	1.89	68.7	0.0273
2011	0.0031	1.00	70.5	0.0141	0.0044	0.96	68.4	0.0140
2012	0.0069	1.77	69.4	0.0254	0.0047	1.09	68.5	0.0159
2013	0.0091	2.29	68.6	0.0334	0.0065	1.48	68.8	0.0214
2014	0.0093	2.23	69.8	0.0319	0.00726	1.74	67.9	0.0256
2015	0.0075	1.71	70.2	0.0244	0.0067	1.56	68.2	0.0229
2016	0.0039	0.94	70.0	0.0134	0.0047	1.09	68.4	0.0160
2017	0.0049	1.14	68.5	0.0167	0.0076	1.78	68.3	0.0261
2018	0.0066	1.66	68.6	0.0241	0.0100	2.41	68.4	0.0352
Sum		15.89		0.2290		15.08		0.2203
Avg.		1.59		0.0229		1.51		0.0220
Grand Average				0.0225				

Lead (Pb)
 [mg/dscm @ 7% O₂]

Date	Unit 1	Unit 2	Regulatory Limit – Each Unit
2009	0.00279	0.00178	0.44
2010	0.00015	0.00004	0.20
2011	0.00081	0.00840	0.20
2012	0.00539	0.00781	0.20
2013	0.00257	0.00243	0.20
2014	0.02960	0.00174	0.20
2015	0.00158	0.00121	0.20
2016	0.00313	0.00384	0.20
2017	0.00116	0.00690	0.20
2018	0.00161	0.01473	0.20
Sum	0.04879	0.04888	
Average	0.00488	0.00489	0.20
Range	0.00015-0.0296	0.00004-0.01473	
Range factor	197	368	

Lead (Pb)

Date	Unit 1			Unit 2		
	Lb/hr	K lb steam/hr	Lb/K lb steam	Lb/hr	K lb steam/hr	Lb/K lb steam
2009	2.80E-4	69.6	4.02E-6	1.81E-4	68.0	2.66E-6
2010	0.154E-4	69.4	0.222E-6	0.043E-4	68.5	0.0658E-6
2011	0.804E-4	69.3	1.16E-6	8.50E-4	70.1	12.1E-6
2012	5.62E-4	68.7	8.18E-6	7.97E-4	68.5	11.6E-6
2013	3.07E-4	69.1	4.44E-6	2.45E-4	67.3	3.64E-6
2014	3.42E-4	69.6	4.91E-6	1.98E-4	68.6	2.83E-6
2015	1.68E-4	69.6	2.41E-6	1.40E-4	68.4	1.80E-6
2016	3.52E-4	69.7	5.02E-6	5.21E-4	68.7	7.59E-6
2017	1.22E-4	67.1	1.81E-6	6.98E-4	67.2	10.4E-6
2018	1.61E-4	64.7	2.49E-6	16.1E-4	68.4	23.5E-6
Sum	23.898E-4		34.662E-6	51.523E-4		76.186E-6
Avg.	2.39E-4		3.47E-6	5.15E-4		7.62E-6
	Grand Average		5.55E-6			

Dioxins/Furans (PCDD/PCDF)
 [ng/dscm @ 7% O₂]

Date	Unit 1	Unit 2	Regulatory Limit – Each Unit
2009	0.315*	Not tested	30
2010	Not tested	0.200	15
2011	1.07*	Not tested	15
2012	Not tested	0.762	15
2013	0.519*	Not tested	15
2014	Not tested	0.372	15
2015	0.525*	Not tested	15
2016	Not tested	0.832*	15
2017	0.400*	Not tested	15
2018	Not tested	5.76*	15
Average	0.566	1.585	15
Average w/o med waste	---	0.445	
Average w med waste	0.566	3.296	
Range	0.315-1.07	0.200-5.76	
Range factor	3	29	

Dioxins/Furans (PCDD/PCDF)

Date	Unit 1			Unit 2		
	Lb/hr	K lb steam/hr	Lb/K lb steam	Lb/hr	K lb steam/hr	Lb/K lb steam
2009	3.06E-8	69.4	4.41E-10	---	---	Not tested
2010	---	---	Not tested	1.91E-8	68.3	2.79E-10
2011	10.89E-8	69.8	15.6E-10	---	---	Not tested
2012	---	---	Not tested	7.21E-8	68.4	10.6E-10
2013	6.11E-8	68.7	8.88E-10	---	---	Not tested
2014	---	---	Not tested	4.11E-8	69.4	5.92E-10
2015	5.62E-8	69.6	8.07E-10	---	---	Not tested
2016	---	---	Not tested	10.80E-8	68.3	15.8E-10
2017	4.30E-8	67.3	6.38E-10	---	---	Not tested
2018	---	---	Not tested	62.6E-8	68.9	90.8E-10
Sum	29.98E-8		43.34E-10	86.63E-8		125.91E-10
Avg.	6.00E-8		8.67E-10	17.33E-8		25.18E-10
		Grand Average	16.93E-10			

Mercury (Hg)
 [mg/dscm @ 7% O₂]

Date	Unit 1	Unit 2	Regulatory Limit – Each Unit
2009	<0.00390	<0.000541	0.080
2010	<0.00187	<0.00100	0.050
2011	0.00477	0.00217	0.050
2012	0.0038	0.0008	0.050
2013	<0.01237	<0.00122	0.050
2014	<0.01049	<0.00169	0.050
2015	<0.00189	<0.00133	0.050
2016	<0.00153	<0.00133	0.050
2017	<0.00384	<0.00215	0.050
2018	<0.00314	<0.00207	0.050
Sum	0.0476	0.01431	
Average	0.00476	0.00143	0.050
Range	0.00153-0.0105	0.000541-0.00217	
Range factor	7	4	

Mercury (Hg)

Date	Unit 1			Unit 2		
	Lb/hr	K lb steam/hr	Lb/K lb steam	Lb/hr	K lb steam/hr	Lb/K lb steam
2009	<3.95E-4	69.6	<5.67E-6	<0.552E-4	68.0	<0.812E-6
2010	<1.91E-4	69.4	<2.75E-6	<0.970E-4	68.5	<1.42E-6
2011	4.88E-4	69.3	7.05E-6	2.16E-4	70.1	3.09E-6
2012	3.97E-4	68.7	5.78E-6	0.832E-4	68.5	1.22E-6
2013	<14.87E-4	67.3	<22.13E-6	<1.26E-4	67.3	<1.87E-6
2014	<12.45E-4	69.6	<17.90E-6	<1.93E-4	68.6	<2.83E-6
2015	<1.98E-4	69.6	<2.85E-6	<1.36E-4	68.4	<1.99E-6
2016	<1.71E-4	69.7	<2.45E-6	<1.80E-4	68.7	<2.62E-6
2017	<4.01E-4	67.1	<5.98E-6	<2.18E-4	67.2	<3.25E-6
2018	<3.13E-4	64.7	<4.84E-6	<2.27E-4	68.7	<3.30E-6
Sum	52.86E-4		77.40E-6	15.314E-4		22.402E-6
Avg.	5.29E-4		7.74E-6	1.53E-4		2.24E-6
		Grand Average	4.99E-6			

Cadmium (Cd)
[mg/dscm @ 7% O₂]

Date	Unit 1	Unit 2	Regulatory Limit – Each Unit
2009	0.000356	0.000466	0.040
2010	<0.000064	<0.000005	0.020
2011	0.00283	0.000627	0.020
2012	0.000382	0.000455	0.020
2013	0.000190	0.000170	0.020
2014	0.00277	0.000345	0.020
2015	0.000373	0.000292	0.020
2016	0.000586	<0.000471	0.020
2017	0.000270	0.00156	0.020
2018	0.002444	0.00285	0.020
Sum	0.010287	0.006241	
Average	0.00103	0.00062	0.020
Range	0.000064-0.002835	0.000005-0.00285	
Range factor	44	570	

Cadmium (Cd)

Date	Unit 1			Unit 2		
	Lb/hr	K lb steam/hr	Lb/K lb steam	Lb/hr	K lb steam/hr	Lb/K lb steam
2009	3.59E-5	69.6	5.17E-7	4.73E-5	68.0	6.96E-7
2010	0.65E-5	69.4	0.09E-7	0.07E-5	68.5	0.095E-7
2011	28.39E-5	69.3	40.98E-7	6.26E-5	70.1	8.93E-7
2012	4.00E-5	68.7	5.82E-7	4.68E-5	68.5	6.89E-7
2013	1.97E-5	69.1	2.82E-7	1.71E-5	67.3	2.54E-7
2014	32.3E-5	69.6	46.3E-7	3.91E-5	68.6	5.60E-7
2015	3.96E-5	69.6	5.68E-7	3.00E-5	68.4	4.37E-7
2016	6.60E-5	69.7	9.49E-7	6.36E-5	68.7	9.27E-7
2017	2.87E-5	67.1	4.21E-7	15.77E-5	67.2	23.47E-7
2018	24.73E-5	64.7	38.24E-7	31.17E-5	68.4	45.40E-7
Sum	109.06E-5		158.80E-7	77.66E-5		113.525E-7
Avg.	10.91E-5		15.88E-7	7.77E-5		11.35E-7
		Grand Average	13.62E-7			

Hydrogen Chloride (HCl)
[ppm]

Date	Unit 1	Unit 2	Regulatory Limit – Each Unit
2009	12.92	5.89	29
2010	8.50	5.48	29
2011	10.69	5.52	29
2012	6.56	5.32	29
2013	12.87	8.64	29
2014	27.80	8.91	29
2015	23.33	3.43	29
2016	6.51	5.48	29
2017	6.12	9.55	29
2018	12.66	5.81	29
Sum	127.96	64.03	
Average	12.80	6.40	29
Range	6.12-23.33	3.43-9.55	
Range factor	4	3	

Hydrogen Chloride (HCl)

Date	Unit 1			Unit 2		
	Lb/hr	K lb steam/hr	Lb/K lb steam	Lb/hr	K lb steam/hr	Lb/K lb steam
2009	1.97	69.5	0.0283	0.87	67.3	0.0126
2010	1.27	69.3	0.0183	0.82	68.5	0.0119
2011	1.44	70.7	0.0203	0.82	70.7	0.0116
2012	1.14	69.0	0.0166	0.84	68.3	0.0123
2013	2.37	69.2	0.0343	1.33	66.5	0.0201
2014	5.18	69.7	0.0737	1.44	69.5	0.0211
2015	3.70	70.0	0.0526	0.55	68.1	0.0080
2016	1.04	70.0	0.0149	0.85	68.4	0.0125
2017	0.92	68.6	0.0135	1.46	68.8	0.0212
2018	2.07	68.4	0.0303	0.92	68.4	0.0134
Sum	21.10		0.3028	9.90		0.1447
Avg.	2.11		0.030	0.99		0.014
		Grand Average	0.022			

Covanta CEM Data

Year	Production (k lb steam)	CO Emissions (tons)	CO EF (lb/k lb steam)	NO _x Emissions (tons)	NO _x EF (lb/k lb steam)	SO ₂ Emissions (tons)	SO ₂ EF (lb/k lb steam)
2018	1,093,728	36.3	0.066	262.90	0.481	4.64	0.0085
2017	1,090,043	11.96	0.022	265.35	0.487	3.93	0.0072
2016	1,090,961	10.91	0.020	268.01	0.491	17.53	0.0321
2015	1,129,417	8.38	0.015	275.39	0.488	21.44	0.0380
2014	1,128,188	10.18	0.018	277.81	0.492	24.18	0.0429
2013	1,137,087	11.05	0.019	275.79	0.485	19.16	0.0337
2012	1,132,459	12.05	0.021	276.46	0.488	18.74	0.0331
2011	1,120,804	11.1	0.020	274.2	0.489	10.6	0.019
2010	1,115,979	12.0	0.022	274.1	0.491	10.6	0.019
2009	1,117,000	13	0.023	279	0.500	14	0.025
2008	1,101,000	13	0.024	285	0.518	10	0.018
2007	1,113,606	13	0.023	289	0.519	5	0.009
		Avg. EF	0.0259		0.5034		0.0279
		Max. EF	0.066		0.519		0.0429
PSEL/PTE @ max. EF	1,300,000	42.9		337.4		27.9	
Existing PSEL Limits		99 (generic)		337		39 (generic)	

Covanta Marion, Inc.

CAM Applicability Analysis 2019